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January 1914

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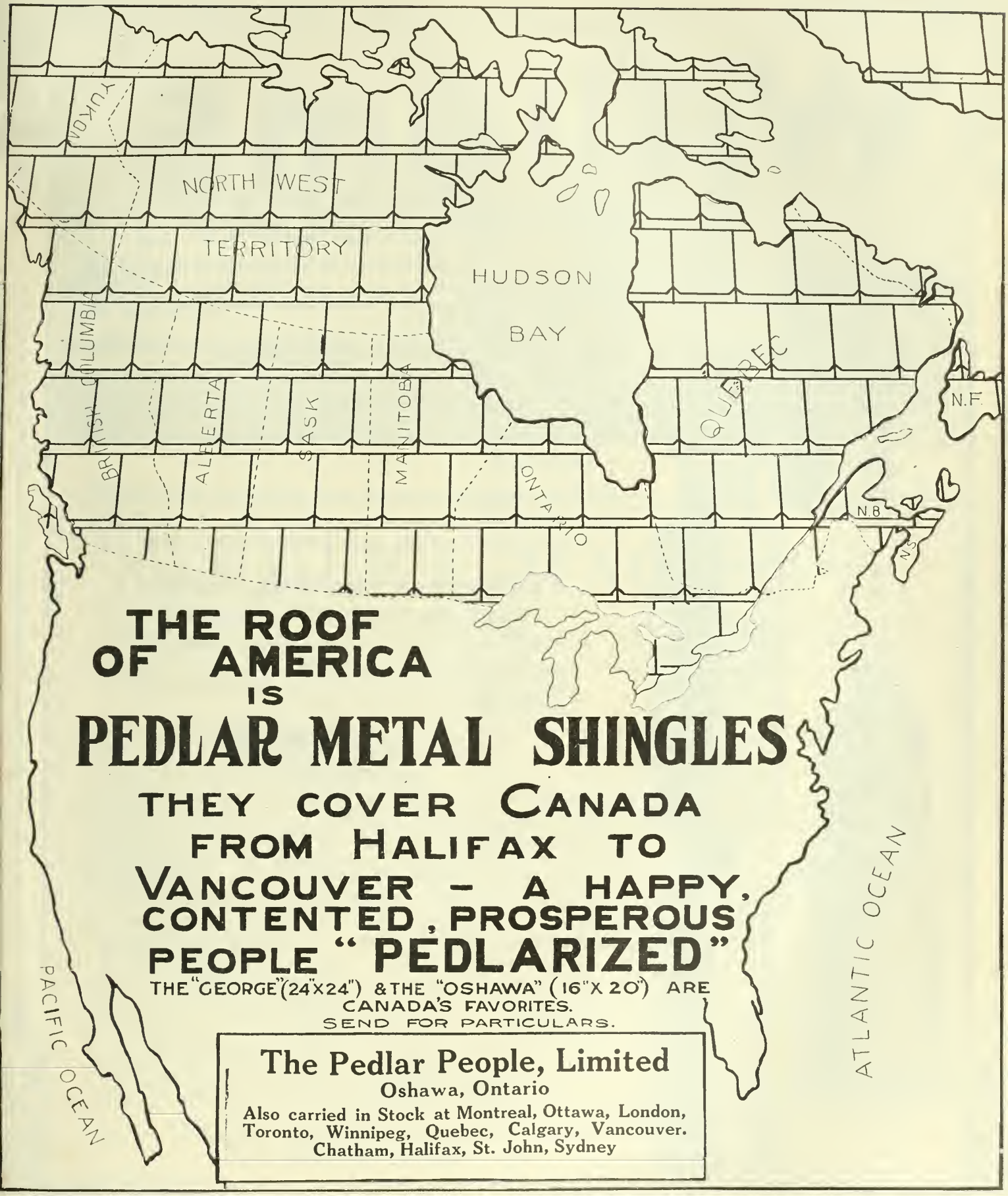

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JANUARY, 1914

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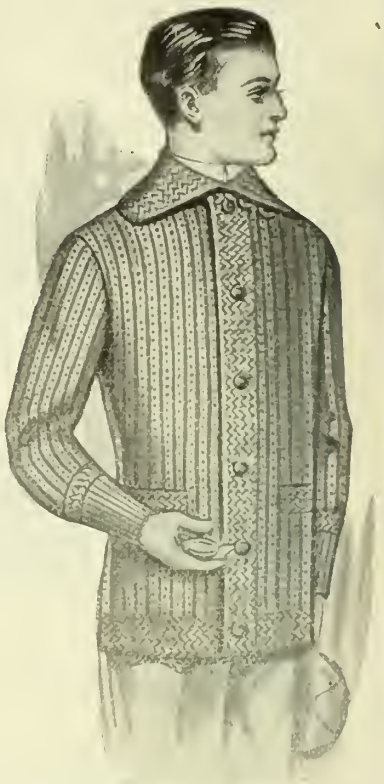

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The FARMER'S MAGAZINE

Vol. VII

January, 1914

No. 3

Getting $5,200 From Live Stock

Fortunes Made and Fertility Maintained in Mixed Farming

By GEORGE H. DACY

Farmers will find upon inquiry that the facts of live stock money-making that have appeared in Farmer's Magazine from time to time are taken from actual life. This account gives only the rough outlines, and many of the assertions of success may be doubted. But the doubting ones are not to be found among the really efficient men. It is quite conceivable to the ordinary observer that our farms are not producing revenues as they should. When we run them to the maximum we will make more money, and while money is not the end we are after in life, it is a mighty force in oiling the wheels of existence.—Editor.

"MAKE YOUR land rich and your land will make you rich." Since the days of Nebuchadnezzar, Virgil, Bates, Cruickshank, and numerous other husbandmen of world-wide fame and renown, this motto has the "open sesame" to agricultural plenty for many a landowner. The final solution which all farmers ultimately accord to the problem of how to secure better crops, of how to enrich their land, of how to increase the potential value of their land is centralized in the phrase "live stock farming." Directly and indirectly practically all the agricultural wealth accumulated by any country owes its inception to the pursuit of animal husbandry in one form or another. Be the farm large or small, fertile or unproductive, competently managed or haphazardly neglected the maintenance of a considerable amount of the right kind of stock over its area will make for its improvement.

The era of the specialized or general grain farm is on the wane except in the favored regions where the fertility of the land has only recently been exploited and the locality subject to intensive settlement. Grain farming is profitably practiced on virgin land which is teeming with adequate supplies of plant food. Mayhap for one or two score years lands of this character may profitably and even bountifully reimburse its owner for the labor he expends in the production of his crops of grains, grain and still more grain. Then the crisis arrives. The productive limit of the land has been reached. Henceforward unless it is carefully managed and intelligently fertilized it will continue to yield smaller and smaller crops. What is the owner to do? In the main he cannot profitably buy fertility in the form of commercial fertilizers with which to replenish his soil. Invariably he seeks help from live stock. He reforms his rotation or he institutes a rotation where only a sequence of grain crops was previously grown. Ordinarily where he farms correctly and maintains stock of the desirable character he ultimately effects the end in view; viz., the reclamation of his mined-out land.

The consensus of all opinions, those of scientific authorities and successful and practical farmers attribute the marked accomplishments of intensive agriculture to the maintenance and improvement of high grade farm animals. The keeping of more and better blood on the farms of a country ultimately means a decided advance in the agricultural prosperity of that country. Many life-long students of intensive farming have versed their experiences in both grain and live stock farming in a way that flatteringly favors the latter branch of agriculture. Boiled down, the meat of their experiences go to show that intelligent live stock husbandry maintains soil fertility and markets the grain and other feeds produced in a more concentrated and valuable form. Under average farming conditions that doubtless will continue to prevail for decades to come live stock husbandry is the most profitable system of farming as it returns a fixed and attractive revenue, it provides plenty of labor for the farm hands throughout the entire year and it continually makes for the betterment of the soil's powers of production.

"The highest type of agriculture is not possible without live stock —the keeping of more and better live stock

It takes time to establish a reputation in the pure-bred business.

The lot fed porker of to-day is blocky, symmetrically fat, broad backed, big-barreled, and built close to the ground.

on the home farm promotes greater interest in farm life and farming activities," is the opinion of one of the most eminent, present-day husbandmen. "Eliminate farm stock as an important factor in agricultural practice and you remove the most powerful magnet that attracts and holds the brightest and best among our farm-raised young men and women on the old homestead," is the way in which another expert in the world of animal husbandry voices his belief.

Look at Britain and Russia

The importance of live-stock farming as related to agricultural prosperity is aptly told in the world's history. The live-stock farmers of England, Scotland, Denmark and Holland have continually improved and advanced while the peasant wheat-growers of Russia and the wheat and rice croppers of India still adhere to a low standard of living in consequence of their improvident existences. Stock farming requires rotation of crops and it necessitates the frequent seeding of the land to grass and clover. It calls for skilful management and activity for twelve months in the year. It forces the farmer to study and keep in touch with market conditions. It increases his acquaintanceship and contact with men both as a buyer and seller. It enlarges his heart and broadens his sympathies beyond the routine of sowing, cultivating and reaping." The foregoing is the summation of years of study and practical effort devoted to the determination of the most profitable line of farming that the ordinary countryman could best follow.

On the other hand exclusive grain growing results in the depletion of the soil's fertility without successfully solving the human food problem. It engenders constant cropping without rotation. It eliminates meadows and pastures. The grain farmer slaves during the rush season and then if he wishes he can loaf the rest of the year. Grain-farming creates a wandering class of farm hands while it stimulates tenantry rather than ownership and the maintenance of permanent farm houses. Most farmers engaged in exclusive grain cropping manifest but little interest in permanent agriculture. Their aim is to skin the land of all that it will yield and to let the other fellow whistle for crops when the land falls to his ownership. The world over, live stock farmers have always massed in the vanguard of agricultural progression. The same cannot be said of the single-croppers or all-time grain producers.

What About the Money From It?

Admitting that stock farming is the most desirable from the standpoint of soil fertility let us for a moment consider the proposition from the viewpoint of net financial income. Will it pay me better to raise grain as a cash crop or will it profit me more if I feed the grain to cattle and hogs and sell the concentrated and more valuable beef and pork? When corn brings sixty cents a bushel, wheat 75 cents and oats 35 cents, can I profitably utilize it in the production of of beef and pork that respectively will sell for eight and eight and one-half cents per pound on the hoof? Will it pay me to be simply a feeder who maintains live stock solely as a medium by which to inexpensively and efficiently market my crops? Is my labor bill to be cut down or increased where I pursue stock farming as opposed to exclusive grain-growing? Must I be a breeder of registered, pure-blood stock in order to reap the maximum income from my stock farming operations?

One could puzzle over thousand of questions involving the merits and deficiencies of general, live stock and specialized grain farming. Actual results are what count in the long run. Practical stock farms in all portions of the world are yearly demonstrating the profit that may accrue where intelligent and judicious systems of animal husbandry management are followed. It takes years of hard work to develop a patronage and to establish a reputation as a breeder and seller of pure-bred horses, cows, sheep, swine, poultry, or, other varieties of farm stock. Once the reputation is made and lived up to the success of the individual is assured. However, he may spend his lifetime in establishing a reputation and then when the fruits of his labors are about mature, the death of the farmer may occur and unless he leaves a son or relative to step into his shoes his years of effort have gone for naught.

The feeder who merely raises and fattens animals of market qualifications immediately realizes on his work even the first season of his operations. He also is establishing a reputation but it is a reputation that pays quicker and more reliable dividends than sought by the breeder. One of the most feasible plans is for the prospective breeder to embark in live stock husbandry as a feeder. His feeding operations will carry him along until his pure-bred stock are in shape to merit popular attention and consequently to command attractive prices. The feeder-breeder predominates among the live-stock-farming successes.

In 1911, the Still and Laughlin farm of Kirkesville, Missouri, famous for its Jersey cattle and Berkshire hogs sold $100,000 worth of pure-bred live stock. This record was not unusual as annually this farm disposes of topnotch Jerseys and high quality Berkshires in large numbers. The practice of intensive breeding operations to produce animals that will correspond to the ideal standards, the use of wide-spread publicity, and constant endeavors to improve the type and quality of the live stock have

As soil renovators sheep surpass all other varieties of domestic live stock.

spelled the rapid rise to prominence of this practical farm.

What 100 Acres Did

In the Northwest States there is a farmer who five years ago counted nickels where to-day he figures dollars in estimating his bank account. The difference has attended his practice of intensive live stock farming in the interim. Last year on his one hundred acre farm he fed in the neighborhood of 75 head of cattle, 300 hogs and 500 sheep. All the animals with the exception of some of the swine were purchased and fattened on ensilage, alfalfa hay, corn and clover hay grown on the farm. Quite an amount of concentrated mill feeds was also purchased which brought added fertility to the fields in-as-much-as the manure was carefully conserved and returned to the land. Excluding depreciation, interest on his investment and a salary for his personal labor the owner of this place last year realized a net profit of $5,200 from his intensive feeding operations.

The most extensive breeder of jacks and jennets in the world operates a general live stock farm in connection with his breeding operations. In 1912 he sold $70,000 worth of jacks, jennets and mules. Yet he began business in straightened circumstances. The judicious pursuit of sensible stock farming put him on his feet and enabled him to accumulate a fortune from the homely game of jack breeding.

$5,000,000 From Farming

Colonel Jim Smith of Georgia is today the boss farmer of America. In 1870 Colonel Jim's wealth was a debit of $3,000, as he had to borrow that amount to cover the losses he accumulated during his first three years of soil-tilling. Thirty-five years later he was estimated to be worth over $5,000,000, every cent of which he made in farming. A cotton-planter, Colonel Jim, was unlike his neighbors in that he maintained all the live stock that he could. When operating at his maximum from his twenty thousand acre plantation he was daily marketing $100 worth of butter, the output of his enormous dairy. The cows were milked and the butter was made by colored women, some of the wives of the fifteen hundred negroes that worked on the Smith plantation. By the judicious use of manure Colonel Jim improved the productiveness of his land to a stage where it yielded as high as one and one-half and two bales of cotton to the acre whereas other Southern planters were gratified if their crops averaged one-quarter or one-half a bale to the acre.

The bonanza grain farms are gradually embarking in the feeding business. Even though they only convert the straw which formerly they were accustomed to burn into beef it is a step in the right direction. It is a simple matter to stack or rick the straw so as to make it accessible to cattle without danger of the stock wasting the roughage. Millions of tons of straw that now are annually burned could profitably be utilized in this way. Direct profit in the guise of added weight to the cattle would result while indirect profit in the form of increased fertility in consequence of the manure produced would accrue to the farm on which such a method was practiced.

Grand champion carload of feeders—International, 1904.

The demand for prime beef and superior quality hogs is always staple. The live stock farmer who feeds and fattens animals of this character, is always assured of a fixed and fairly attractive profit, other things being equal. Similarly quality mutton as well as first-class will invariably find ready sale. The existent demand for draft horses and mules shows no let-up which indicates that high prices will continue to prevail. City demand for sanitarily-produced milk and cream shows no abatement.

The formation of milk-producers' associations throughout the leading dairy districts for the purpose of increasing the price of milk and of protecting the interests of the producers are bettering dairy conditions. The organization of live stock shipping associations to assist the small farmer in combating the relentless middlemen are increasing the profits of the feeder of cattle, swine or sheep who is so fortunate as to be a member of one of these associations.

The passage of stallion laws in the majority of the pure-bred horse regions and the organization of community breeders clubs have been pronounced steps in the way of live stock advancement. The improvement in the make-up of the stock shows and fairs and the increasing of the educational significance of such exhibitions have aided in bettering live stock conditions in many sections. Indefinitely one could continue in this vein mentioning this factor and that which all together are uniting in popularizing animal husbandry as the premier branch of modern agriculture. It is an occupation that merits the investigating scrutiny of every Canadian farmer, be he a grain grower or a stockman. "Never too old to learn," says the patriarch. That is why there is still a chance for you to reform your farming methods to include a system that will feature more live stock of better blood and breeding as the headliners of your operations.

The Horse Show

By MINNA IRVING

Velvet, satin, sweeping plumes,
  Sable, spangles, tall aigrettes,
Poms, and panniers, and perfumes,
  Puffs, and powder, and lorgnettes,
Muffs, and fans, and picture hats,
  Diamond collars, ropes of pearls,
Gossip, glitter, spurs, and spats,
  Giddy matrons, gushing girls.

Chiffon scarves and ermine tails,
  Hand-embroidered opera-bags,
Orchids, violets, and veils,
  Gold and gabble, flowers and flags,
Buckskin breeches trim and tense,
  And divided skirts of course,
Everything in evidence
  Of importance but the horse.

—*Leslie's.*

Free Wheat and Mixed Farms

What Will the Removal of the Duty Do to the Canadian Farmer?

By JOHN BAYNE MacLEAN

The new United States tariff provides that when Canada removes her duty on American wheat, the United States will admit Canadian wheat free of duty.

As the production of wheat is declining in the United States and increasing in Canada, it is not likely that Canadians will be benefited in any way by the import of American wheat, while Americans will be able to buy wheat at slightly lower prices and American mills will be able to grind a great deal of the Canadian wheat and American farmers and feeders of stock will be able to purchase at lower prices the by-products of wheat, such as bran, middlings, jumbo flour and shorts to be used in feeding and fattening their stock.

Canadian grain-growers may in all probability get higher prices for their wheat, but the mills will have less wheat to grind and the farmer who feeds stock, who manufactures his thin stock into fat stock will have less feedstuff available and will have to pay more for it.

Western grain growers are bringing very strong influence to bear on the Government to remove the duty and if it is in the farmers' best interests to export a great part of his wheat to the States, then the Government should remove the duty, even if it is to the disadvantage of the miller. The farmer is of greater importance.

The Government, however, should not act quickly. They should not be stampeded by an agitation. They should investigate. A committee should be appointed as soon as the House meets to ascertain definitely whether a slightly higher price for wheat will not be offset by the scarcity and the higher price of offal or mill by-products needed by the Canadian mixed farmer. It is constantly argued that the greater percentage of profit is made by the man who manufactures and not by the man who produces the raw material. If this be true, and it undoubtedly is, then the farmer who manufactures his raw material into the products sold to the consumer is the one who is making the greater profit. That is, the farmer who feeds his own raw materials or buys raw material, such as bran, shorts, and so on, and fattens his own stock, is the one who will obtain the greatest profit and is therefore the more important farmer and the more valuable citizen.

A similar case came up many years ago when the British Government under the inspiration of the cattlemen of Great Britain placed an embargo on Canadian lean cattle or stockers coming into England on the ground that Canadian cattle were affected with pleuro-pneumonia. As nearly everyone knows, this was a most unjust and unwarranted implication upon the health of Canadian herds.

Sir Charles Tupper, who was then Canadian Commissioner in London, upon learning that a certain shipment had been condemned under this regulation, was able to show by a tactful movement on his part, that in the herds which had been slaughtered, there was no trace of disease and moreover that not a single case against Canadian cattle had been made out. It is, therefore, evident to all that this regulation was purely a roundabout-way of offsetting the competition of imported cattle.

This forced the Canadian cattle raisers to fatten their cattle at home. The fattened animals were shipped over and a healthy trade was built up along these export lines. Thus, what was at first considered a severe blow to the Canadian cattle trade turned out to be an indirect benefit and blessing in disguise to Canadian farmers.

Before the days of the silo—Eastern farmers on the mixed farms that have done so much for agriculture, grew large crops of turnips. The harvesting of these was no small task, as thousands of bushels were fed in the cattle stables.

Holstein herd on the Tregillus farm near Calgary.

Growth of Farm Economics

How the Democracy of the Western Farmers is Making the Laws

By W. J. TREGILLUS

Only he who knows the inside history of the Grain Growers' Association of Western Canada can form any adequate appreciation of the struggles and triumphs of this, the greatest farm organization in North America. Several of the leading members of the provincial organizations have been to Ottawa recently, and have visited various parts of Ontario after attending the meeting of the Dominion Grange at Toronto, where Mr. W. C. Good, M.A., was master. Mr. Good is an honor graduate of Toronto University, and now lives on his farm near Brantford. The writer of this article is the Hon. President of the United Farmers of Alberta. He lives on his big farm near Calgary, illustrations from which are shown herewith.—Editor.

"PROBABLY the farmers of Western Canada have more advanced ideas on taxation than any other body of people in the world."

This was a statement found in an article in one of the most democratic journals published in the United States; with "taxation" it could have included other reforms, such as free trade, direct legislation and government ownership of public utilities.

We farmers have been driven to reform by the heavy—in many cases unbearable—tribute levied by the monopolies, mergers and combines which meet the Western farmer at every turn, whether selling the products of their farm or purchasing the needed commodities for their farms.

Accustomed to pioneer life and its attendant difficulties, it was natural that the best means of deliverance from the economic bondage, into which we had drifted should be considered, for it could as truly be said of the Western farmers, as was said of the people of old by Isaiah "Therefore my people have gone into captivity for lack of knowledge."

Calamities are sometimes blessings in disguise, and it may be that the economic difficulties we are now encountering will give us the education we need, and produce a more sturdy, more rugged and higher type of manhood and womanhood.

We found our only means of combating the combines, trusts and organized capital—which exact tribute from productive labor, without as much as "by your leave"—was by organization and co-operation. We saw plainly that agriculture unorganized, unco-operative must inevitably become the prey of organized forces; from these consequences we could see no escape.

The touchstone then, of success, was in organization, and we at once started to organize; and we now believe there is nothing on this earth that will have power to come between us and complete emancipation, when once we are thoroughly organized.

Manitoba gave the name "Grain Growers' Association" to her organization and Saskatchewan formed her organization under the same name. Alberta originally had two associations. These amalgamated about six years ago under the name of "United Farmers of Alberta." These three provincial organizations have a combined membership totalling nearly 60,000.

The "United Farmers of Alberta" consists of five hundred and fifty-one unions—as the local branches are called—with a membership of about 15,000. These "Unions" are scattered over the whole Province, from the international boundary line on the south to the Grand Prairie and Peace River districts in the north, with new unions being constantly established and a greater demand for speakers to organize than we can supply.

Local unions hold their meetings once or twice each month except at busy seasons of the year when they are suspended. These settle local questions and discuss matters common to the whole Province. District conventions are held when necessary and the annual convention of the whole association is held each January.

This convention lasts three days and is the most educational feature of the Association; to the uninitiated it is a surprise, and most interesting and inspiring to all. It would be almost impossible to find a more cosmopolitan gathering; to look into the faces of these five or six hundred sons of the soil certainly inspires confidence; and to hear the intelligent discussion is a revelation. It would be difficult to parallel this institution, for here are threshed from raw, immature opinions—fresh from the mind—with rapid effectiveness, useful instruments and discarded material. This is largely due to the fact that most of the delegates have come to the Province from all parts of the world, many having been interested in other lines of endeavor before taking up agriculture.

As an organization we believe in absolute free trade, and welcome the democratic tariff revision in the States, which we trust will have its influence on our Government. There certainly should be no tariff walls between us and America, or, indeed, between any countries. We farmers recognize how we are hampered and penalized at every turn by, so-called, protection, and we are determined to

work until we are rid of this evil, for it is nothing less than a huge pump, pumping from the pockets of the many —the producers—into the pockets of the "privileged" few.

We are proud of the work we have done, and of the progress we have made in single or land value taxation.

In 1912 the Rural Municipality Act was passed, in answer to the requests of the organized farmers and the Local Improvement District's Association. Under this Act all local improvement districts may be organized into rural municipalities, and the portion in the Act referring to taxation reads "Land shall be assessed at the cash value, exclusive of the value of buildings erected thereon, or any other increase in value caused by any expenditure of labor or capital thereon." This clause, it will be observed, compels every newly organized community to assess land values as the sole source for necessary revenue. What this really signifies for future generations should not be hard to imagine. This applies also to villages, the tried experience of assessing land values only has been so satisfactory that the Government amended the various acts to make it compulsory for them to seek all their revenue from land values.

Improvements Not to be Taxed

The Town Act of 1911 gives the privilege of assessing improvements at sixty per cent. of their value, with optional reduction of fifteen per cent. annually until entirely wiped out, and many towns have taken full advantage of the Act, although in some instances, due to unwise extravagances, difficulties have been experienced, they are now adjusting their affairs in keeping with the better order for raising municipal revenues.

The cities of Alberta, Calgary, Edmonton, Lethbridge and Medicine Hat, are governed under special charters, all of which permit annual reductions on taxing improvements until all improvements are exempt. Edmonton has already abolished her tax on improvements, and the others are following her example.

This organization stands for, and has been steadily working for direct legislation, and made this the first plank in its platform, because we recognize that through its operation great reform can be accomplished. We now have a statute on our books incorporating this form of Government into the Constitution of Alberta, the Act having been passed early this year.

Direct legislation is becoming better understood, and is making many friends, because it is absolutely non-partisan, having not the remotest relation to any party, creed or sect, nor any other political or economic question. It is merely a process of making known the will of the voters. Its advocates are found in every party, holding the most varied and contradictory theories and beliefs, but they are united by the one belief that the people should have a way to express and enforce their will in Government. This is a platform upon which all can and should unite; in short, direct legislation is the means of doing what the majority of voters want done.

The Co-operative Elevators

After many years of work we have secured the special act by which we have Government aid for building elevators. This Act is known as the Alberta Farmers' Co-operative Elevator Company, Limited, and is on true co-operative lines, which provides for interest on money invested and dividends on the amount of business done, and one man one vote. We have over fifty elevators now operating throughout the province, and expect to build one hundred more, to be ready for next year's crop. The Alberta Farmers' Co-operative Elevator Co. is already such a boon that had we nothing else to show for the work of our Association it would be well worth all our labor. We have also induced the Government to give us a Co-operative Act, a Machinery Bill, and Thresher-men's Lien Act. These were passed early this year.

We are working for better and cheaper accommodation in short loans, to enable the farmers to market their crops and settle up their business annually, and also mortgages to enable them to make permanent improvements on their farms, so that they may place them in better condition for the future at the minimum of cost and expenditure for labor. We believe that the farmers should be able to borrow money for long periods at reasonable rates of interest, repayable in fixed annual payments of principal and interest. It seems remarkable that the farmer, who is really financing the whole world, by creating the wealth, should be taxed so heavily for the accommodation he needs.

What Western Farmers Stand For

We strongly favor Government ownership of public utilities, and welcome the prospect of having the Hudson's Bay Railway owned and operated by and for the benefit of the people. We are also doing what we can to promote education, temperance, world's peace, and the extension of the franchise to women on equal terms with men.

In these different lines of endeavor the United Farmers of Alberta are doing their part to mould and build the great province in which they live. People are apt to think that the politicians and men in the public eye are making the country; but it is the men and women who are settling the land, growing the crops and raising the boys and girls who are to be the men and women of to-morrow. These are the makers of the nation.

We are striving to build on truly democratic lines, fighting for an equitable distribution of wealth; we want conditions whereby the wealth producers may be able to retain a fair proportion of the wealth they create. Our aim is to stop the wealth from flowing so freely into the pockets of those, who, although they do not produce it, understand the laws governing the distribution of wealth, and who are ever on the watch to have those laws fashioned to serve their own ends.

The last century was renowned for the acquisition of enormous fortunes by the few; but if we Western farmers are true to our cause this twentieth century will be noted for its equitable distribution of wealth among the many who produce it. Our slogan is:

"More for toil and less for spoil,"
More for need and less for greed."

Our organization is becoming more and more alive to the unfair and unscrupulous methods which enable the few to grow rich at the expense of the many. These methods explained, answer the burning question now exercising the minds of thinking people not only in this but in other countries, viz.: "The high cost of living," and we welcome every help in the work of education which we have undertaken, till that new era for which we are striving shall open

Buildings on Tregillus farm, with their shelter of trees and bluffs.

Registered hackney, Terrington Flashlight.

before the people of this great God-given country.

This young giant, "Canada," has been asleep, and during that time was bound in chains and fetters of political, economic and social bondage, but is now giving unmistakable signs of awakening. We can already feel the quiver of his muscles and the movement of his limbs; we shall soon see him wide awake, and then see the bursting of the bonds and yoke of bondage thrown aside.

The mass of people are learning their first lesson in economics, and are beginning to see that if the few who control the monopolies, mergers and trusts can levy tribute on the wealth producers to the extent of some fifty per cent. of the amount produced, the remainder will have to live on one-half the amount they are entitled to. Or, in other words, they will have to pay double the price to cover the tribute money claimed by the barons of privilege. Such conditions are responsible for the increased cost of living, rural depopulation of older districts, the influences that create city slums, and explain the enormous wealth of the few and the poverty of the many.

The movement toward the righting of these conditions is, however, well launched, and it is with pride we note the organized farmers of the West are leading. Some claim that any "legal" gains are just, but I claim that no law is legal, and should be abolished, that does not square with morality; this is the foundation on which we are building. When this longed-for epoch arrives all unnatural inequalities, all artificial obstructions, all deadly grinding toil, all involuntary poverty, and all unfairly acquired wealth will be eliminated, and the best opportunities will be given to every man, woman and child for their highest development, physical, mental and spiritual.

Another view of the house and grounds on the Tregillus farm.

Riches of The Mackenzie River Basin

The Coal and Corn and Cattle of the Last Great Homestead Land of Canada

By W. D. ALBRIGHT

Much of the mystery which for so long has hidden from us the realities of the far North, is lifted in these paragraphs from the pen of a well-known Canadian editor and journalist. The vision of the northern river basin as a promising agricultural territory will come as a revelation to many of us, while the colonization of the last great tract of Canadian homestead land by a fine, serious, industrious Teutonic people opens a new prospect of vital, national import. Living in this territory and gifted with a genuis for description, Mr. Albright is able to give us a striking picture of things as they are.—Editor.

I think I hear
The sound of that advancing multitude
Which soon shall fill these deserts. From the ground
Comes up the laugh of children, the soft voice
Of maidens, and the sweet and solemn hymn
Of Sabbath worshippers. The low of herds
Blends with the rustling of the heavy grain
Over the dark-brown furrows.
—Bryant.—

TAKE A MAP of Canada. Open it wide to give a bird's eye view of the chain of federated provinces, from Nova Scotia on the east, itself large enough for a good-sized nation in Europe; across the little peninsula of old Ontario with its two or three million busy inhabitants, across Manitoba, Saskatchewan, Alberta and British Columbia; thence north to the Yukon and Mackenzie territories. Note that the sixtieth parallel of latitude, which divides these two northern territories from the last three provinces to the south, projects through the Russian province of Siberia, continuing westward to St. Petersburg, about the fifth city of Europe. Consider that in Russia wheat is said to be ripened within the Arctic Circle, several degrees north of the sixtieth parallel, while in our own Mackenzie territory, first-class wheat, barley and oats were matured this year at Fort Simpson, just south of latitude 62. I saw samples of this grain in Edmonton and was surprised at its perfection and hardness.

Now glance at the position of Edmonton, well below the central latitude of Alberta. In our geography days it was a fur-trading outpost of civilization, barely on the edge of the map, and in a region regarded by most of us as too cold and frosty ever to be fit for agriculture on any extensive scale. As late as 1906, the census counted it eleven thousand souls. Edmonton to-day is a beautiful, flourishing city of seventy thousand people, the converging point of three transcontinental railways with radiating branches, and the market metropolis of a vast farming and stock-raising section where cattle thrive excellently and oats give reputed yields up to a hundred and thirty bushels per acre, weighing anywhere from forty to forty-eight pounds per bushel. Ride North by C.N.R. a hundred miles to Athabasca Landing and behold at St. Albert, Clyde and other points prosperous settlements along a considerable length of the road, with more grain acreage in the vicinity of the Landing than was sown at Edmonton in the time of our school-days. The era of surmise has passed. Facts are speaking for the North country to-day. They have already spoken plainly to all the world of the Red and Assiniboine basins, and of the South and North Saskatchewan valleys, where grain by the hundred million bushels was garnered this autumn. But it is not of these regions we write. Our theme is the basin of the great Mackenzie, the Amazon of the North.

The Amazon of the North

Glance again at the map. Observe that as the South and North Saskatchewan with their many branches take rise in the Rockies and flow eastwardly across the Southern half of Alberta, so the Athabasca and the Peace, rising farther north in the same mountain range, unite each its many tributaries and flow in a general north-easterly direction across the upper half of the province to the region of Lake Athabasca, into which the former discharges while the latter flows into the Great Slave River, which carries the combined volume of the two great water-courses to Great Slave Lake, drained north-westwardly by the mighty Mackenzie, some 2,500 miles long. North of the Peace, the

Liard with its many branches rises in British Columbia and this stream also empties into the Mackenzie at Fort Simpson. The immense watershed drained by the Athabasca, the Peace, the Liard, the Mackenzie and the many lesser streams flowing into these and into Lakes Athabasca, Great Slave and Great Bear, constitutes the Mackenzie Basin, the more southerly portions of which are now being opened to settlement, more particularly the valley of the Peace.

Alberta is 750 miles from north to south with an area of over a quarter of a million square miles. Approximately half its latitude and much more than half its area lie within the Mackenzie basin, which comprises also a part of Northern Saskatchewan, a corner of Northeastern British Columbia and all the region styled the Mackenzie District. Within this tremendous area of many hundred thousand square miles lie unmeasured resources of soil, timber, minerals, fisheries and fur. A considerable proportion of the more southerly part is wooded, chiefly with poplar and spruce, some of which is large enough to saw. Spruce is the white pine of Northern commerce. Fish and game abound, the latter ranging from the partridge to the moose, from the rabbit to the lynx, and from the beaver to the bear. The finest trout and white fish in the world occur in the cold-water lakes and mountain-fed rivers of the North. I have partaken whereof I speak.

Gas, Oil and Coal

The extent of the mineral deposits is a matter of conjecture. Some facts, however, are established. Great coal areas lie on the Eastern slope of the Rockies. Twelve miles from where I write settlers mine it from the banks of the Red Willow river. Along the Mackenzie are miles of coal, one bed of which is said to have been burning for nearly a century. North of Athabasca Landing are deposits of asphaltum which engineers declare more than sufficient to pave every street in Canada. J. K. Cornwall, whose romantic and successful business career in the North country has made him perhaps the best-informed of all men concerning it, suggests that natural gas underlies probably the whole territory and quotes geologists as holding that prospects indicate the largest oil and gas fields in the known world. Mr. Cornwall also informs us that experts have located gigantic copper deposits. Salt, galena, tar sands, mica, gypsum, silver and gold are among the other forms of mineral wealth declared to exist, though in what quantities we know not.

Few regions are so fortunate in their water-courses. The deep, majestic Peace is navigable from Hudson's Hope at the Rocky Mountains clear down to the Chutes below Vermilion and again below the Chutes is another navigable stretch to the cataract at Fort Smith on the Slave River. This is the last interruption on the route to the Arctic Ocean. The Athabasca presents long stretches of navigable water both above and below the ninety miles of rapids that occur between Athabasca Landing and Fort McMurray.

Yet, nothwithstanding these long stretches of smooth water, there must be great hydro-electric potentialities. Without having seen them, I should suppose that the Chutes of the Peace, the waterfall at Fort Smith and the rapids on the Athabasca would present attractive opportunities in this direction. The Little Slave River, which drains Lesser Slave Lake into the Athabasca, has considerable fall for part of its distance and what better mill-pond than a lake? By the way, I am told that the head of the Little Slave River, where it leaves Lesser Slave Lake, is always open in winter, though situated in a region where the thermometer falls to sixty and seventy below zero. The Smoky River, an important tributary of the Peace, which it enters from the south near Peace River Crossing, is described as a turbulent stream such as one would expect to appeal to an electric engineer. The fact of the large rivers being fed by melting snow-fields guarantees a strong mid-summer flow, favorable alike for navigation and power development. It is true they lower considerably in autumn and with perhaps the one exception noted above, freeze over solidly in winter, but even at low water, the Peace may be traversed by steamers of considerable draft while the Athabasca, though sometimes forbidding October navigation over its wide, rough-bottom shallows, is still a broad and splendid stream.

But, after all, it is some form of husbandry on which the ultimate future of the Mackenzie Basin, as of any other large region, depends. Mines are exploited and left. Forests, if not burned, are cut and forsaken. Fish and game may diminish. Mills must have something to grind. Here, now and everywhere, agriculture is the great sheet-anchor industry that guarantees permanent traffic to railroads, regular business to cities and demand for the service and products of a resident population. Without it, the future of the North would be based on shifting sands, with towns to-day, desolation to-morrow. Where agriculture prospers, cities stand and grow. Hence the eager attention which from the earliest days has been paid to the agricultural possibilities of the Mackenzie basin, more especially the Peace River Valley.

Of fundamental importance to agriculture is the question of climate. Climate has been the bugbear opposing the settlement of every new district of Canada from earliest times. I am told that when the U.E. Loyalists sent emissaries to spy out the land along the north shore of Lake Ontario in what are now Hastings and Prince Edward counties, they took back word that people "might" live there! How well they live the present splendid farmsteads of those counties attest. So it was with Western Ontario, the Bruce Peninsula, the Ottawa Valley, the Red River Valley, the Clay Belt of Northern Ontario, the Valley of the Saskatchewan, and so it has been with the Peace.

Altitude and Climate

Two important factors besides latitude affect the climate of Western Canada. They are altitude and proximity to the influence of warm Pacific currents. Climatologists have estimated that a thousand feet of altitude are equal to 300 to 350 feet of latitude. Here is a table showing how the altitude of Alberta decreases towards the north.

Height of representative points above sea-level:

	Feet.
Lethbridge	2,982
Calgary	3,428
Edmonton	2,188
Dunvegan	1,305
Peace River Crossing	1,225
Fort Vermilion	950

This northward decline from the elevated plateau of Southern Alberta accentuates the northwestward trend of the summer isotherms, which ordinarily tend to swerve northward as we come within the influence of the warm Japan current of the Pacific so that the tree belt which at Hudson's Bay extends only as far north as Fort Churchill, runs sharply northwestward and the history of crop production at Church Missions and Hudson's Bay Company stations in the North indicates that the lines of grain production swerve northward in correspondence with the tree belt.

A VISION OF THE PEACE RIVER.

"When railroads have coupled our hundred-league stretches of smooth water and the dynamo has harnessed the cataract; when the sawmill screeches at its task in the woods and dynamite delves into the bowels of the mine; when fire and the axe have demolished the wilderness and the plough has inverted the sod; when cattle succeed the moose and the trapper has fled before the settler, the New North will be truly a goodly land. Cities will arise on the rivers, railways will gridiron the country, herds will graze on the hillsides, and farmsteads will dot the plains. When? did we say? When shall it be? Now. Soon. The inflow of settlement has commenced, undaunted by the defy of distance or the quagmire of bottomless trails."

Farming 550 Miles North of Edmonton

Of all the vast Mackenzie territory the valley of the Peace has ever been regarded as the banner section. Many have excluded the Athabasca and Mackenzie valleys as unworthy of serious consideration. Why they have done so I am not yet fully satisfied. Latitude cannot explain it for the Peace lies a hundred miles or so north of the Athabasca. It cannot be altitude for there is no sufficient difference in that respect. Nor can it be wholly a question of longitude for while the upper Peace Country is favored with the Chinook winds, Vermilion on the lower Peace, from which we have long heard favorable reports, is both farther north and further east than Athabasca Landing. It cannot be wholly a difference of soil for in our recent migration to Grande Prairie we passed along black soil free of stone for practically the whole five hundred and fifty miles from Edmonton, save a sandy jackpine belt south of the Landing. I am told there is light sand and muskeg in places along the Athabasca, but there is also good land in many sections as I know from personal examination at points on the river bank. Along the south shore of Lesser Slave Lake is much first-class soil, which extends clear across the watershed to the Peace River. I suspect the chief reason for discrimination is that the valley of the Peace is largely a prairie or light-scrub district while the valley of the Athabasca is comparatively heavy-timbered. The Peace River region is prairie simply because the forest has been burned off long enough since, hard enough and often enough to kill most of the trees and allow sod to form. Thus, throughout the North, patches of prairie occur irregularly in the midst of densely forested regions. Disappearance of the trees lets in the sun and wind, drying the soil somewhat, probably reducing the danger of frost and, at all events, clearing the land for the plow. Land in this condition appeals to the settler as "good land" while equally rich or richer soil alongside, lying just as nicely but covered with trees, is passed by as unworthy a thought. From the standpoint of expediency, the settler is right enough; for, apart from the great labor of clearing, we must remember that small, open patches in the midst of thick bush where tree-roots hinder run-off would be frost-wells, unsuitable for agriculture. But after the prairies are occupied, the day will come when settlement will gradually encroach upon the forest as it did a century ago in the East and then millions of acres now in forested muskeg will produce bounteous grain and grass. If the Peace River country proves out, I see no reason why portions of the valley of the Athabasca should not do likewise. Similar comment applies to other large areas in the North. But the Peace will be settled first. As for the lower Mackenzie, we may for the present accept the opinion of Bishop Grouard, who claims that, while crops have been raised and stock kept at their missions, the eight months' stabling necessitated is too long and the climate too severe to be congenial for agriculture.

Peace River is the magic lodestone of the North. At Athabasca Landing we saw a sign "Peace River Blacksmith." Why does he call himself "Peace River" blacksmith? one naturally asked. "Oh, he's catering to the trade of settlers passing through. Peace River is known far and wide, and this district is content to share its glory." Thus, even on the banks of the Athabasca "Peace River" is the name to conjure with. All along the way, whenever comment was made on the region passed, we were told, "Wait until you see the Peace." Perhaps it was because of expectations raised too high but the realization was just a trifle disappointing. True we saw a river of much greater volume than the Athabasca, flowing in a much deeper channel bordered by high cut banks clothed on their less rugged slopes with grass and poplar scrub instead of forest. But the soil looked no better than some we had passed and there seemed to be more wind. I write this not in disparagement of the Peace River Valley but rather in support of the opinion stated above. In epitome we might say that while there is some rough land, some light land and some swampy land in the Mackenzie basin as well as much territory where the climate is too severe for satisfactory prosecution of agriculture, there must be millions upon millions of acres which, sooner or later will be tilled or grazed by domestic live stock.

The Peace River Country

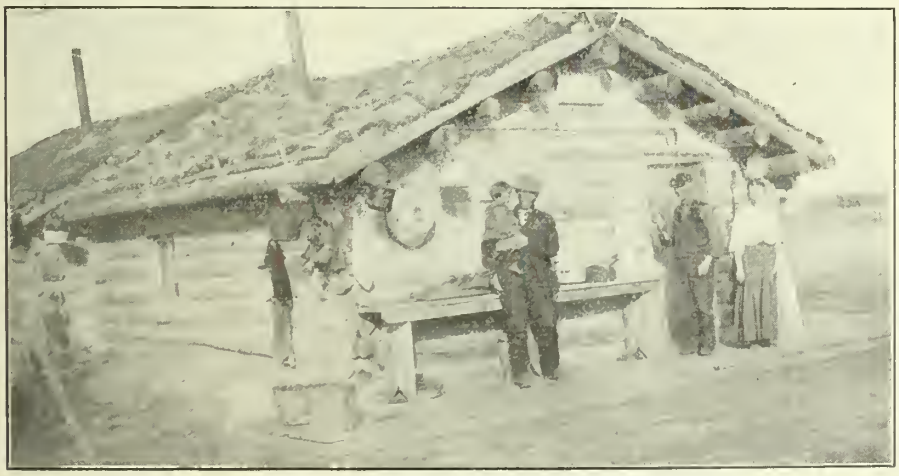
Strictly speaking, the Peace River Valley is of very small extent, the arable portion consisting of narrow strips of flat or bench lands bordering the stream and confined by steep, irregularly-sloping banks that are six or seven hundred feet high at Dunvegan and Peace River Crossing, but spread out and lower, I believe, toward the lower reaches of the river. This tremendous channel has clearly been worn out by erosion through the plateau it drains and the fact that at neither Dunvegan nor the Crossing did we notice any rock except what might have been brought down from the mountains, and a little glacial drift in one or two places, indicates something of the enormous depth of soil.

The smaller tributaries that unite with the Peace seem mostly to follow the level of the plateau until within half a mile or a few miles of the valley and then dip down sharply, having worn out enormous gulches that widen and deepen as they near the river-bed. In the bottom of one of these chasms five or six hundred feet deep you may see a little thread-like rivulet or perhaps no sign of water at all.

When we speak of the Peace Valley, however, we include not merely the narrow gorge in which the river runs but the broad plateau it drains. This varies in topography and character from the imperceptibly sloping plain north of the river between the Crossing and Dunvegan to the rolling Grande Prairie and Pouce Coupee sections farther south and west. Grand Prairie, by the way, is not in the main Peace watershed but borders the Beaverlodge and Red Willow rivers, which are tributaries of the Smoky, which, as stated above, is a tributary of the Peace.

It is these plateau regions, many hundreds of feet above the main river bed, of which James Macoun expressed doubts in the widely circulated discussion with his father years ago. It is these, also, of which Warburton Pike, the noted English adventurer, wrote after traversing it in 1889:

> "I made careful enquiries along the whole length of the Peace River and I do not for a moment deny that in some parts of its course, wheat and barley may be raised in favorable seasons, as the well-managed farms of Mr. Lawrence at Vermilion and Mr. Brick higher up at Smoky River fully attest; but these farms and all the spots in which grain ripens are in close proximity to the bed of the river, and here the amount of arable land is limited. Climb the steep banks and take a glance over the millions of fertile acres which the philanthropic politician wishes to see cultivated; notice the frost on a summer's morning and make the attempt, as has so often been made before, to raise a crop on this elevated plateau. In ten years' time this may be a cattle country, although the hay swamps are insufficient to ensure enough feed for the long winter,



The man in a new country has to be Jack-of-all-trades. Note the axe-handle on the right of the horseshoe over the door, and the cobbler's last hanging up around the corner.

but let us have an end of this talk of sending poor settlers to starve in a land unable to supply food to the Indian, who is accustomed to a life of continual struggle with a relentless nature."

Filled With Settlers

Well, we climbed those banks at the Crossing and found that practically all the land along the sixty-odd miles to Dunvegan had been filed upon by confident settlers. South of the Crossing in Little Prairie we had seen hundred-acre fields of heavy-yielding oats ripened hard enough for feed, if not for seed. Beyond were equally heavy fields, not all ripened, however, because of late seeding and reaping. At Burnt River I was shown a pile of not less than four bushels of fine potatoes declared to have been grown from four large tubers cut one eye to a piece and hand-planted with the eye up. Another potato of average size planted the same way yielded what looked like over a bushel. Farther south-west at the "Waterhole," we saw a bin supposed to hold fifty-four bushels of Marquis wheat said to have been grown from one bushel sown on one acre. An acre of two-rowed barley seeded at the same rate yielded forty-eight bushels. A twelve-acre field of oats threshed out at the rate of ninety bushels to the acre and the owner estimated that, if all the sheaves had been put through the machine he would have averaged a hundred.

Does all the grain in the Peace River valley yield this way? By no means. Ill preparation, occasional drouth, early frost, and lack of sufficient seeding and harvesting machinery prevent that. Much grain is frosted even in the present favorable season, but frost will diminish as the sloughs are drained and the black earth is turned to the sun, even as it has been in Manitoba. In that province they now raise corn on land where at one time wheat was an uncertain crop. Meantime it is good to know that frosted oats make excellent feed. All through Northern Alberta many fields of oats are sown with a view to cutting for "green feed." Stacked oat-sheaves are the ensilage of the North. In Grande Prairie, which has been partially settled for four years, average yields of grain have run about twenty to twenty-five bushels for wheat, thirty-five to forty for barley and sixty or seventy for oats. Fall wheat is usually a fairly successful crop. Cultural and harvesting operations have been greatly hampered by lack of machinery which has had to be freighted by sleighs a distance of three to five hundred miles, depending upon the route taken. Three flour and grist mills are now established in Grand Prairie, also four saw mills. Three steam-power threshing machines and two horse-power outfits are overworked.

But the North is pre-eminently a stock-raising country. Cattle grow well, fatten readily and dress out heavy. Scrub shelter and feed are all they require, though a little extra care in extreme weather is no doubt profitable and humane. Apart from summer frosts, which will decrease, and winter cold, which with the exception of occasional extreme spells is said to be not at all unbearable, perhaps the greatest climatic drawbacks are the long winter nights and occasional summer droughts. Two years' records of a meteorological observer on Grand Prairie show that the climate of the Peace River country, as of any other region, varies with locality and season. Grand Prairie, whence I write, is perhaps more favored than the most of the territory. It lies well south of the main Peace Valley and within sight of the Rocky Mountain peaks, through the passes between which it receives many tempering Chinooks. Occasionally the winter temperature dips to fifty or sixty below zero but these extreme cold spells seldom last long and are unaccompanied by wind. Most of the winter is said to be delightful. Last February was a delightful month. From the local meteorological records I learn that out of twenty-eight nights, there were at least fifteen when the thermometer did not touch zero and seventeen below was the coldest night of the month. There were twenty-two frosts in April, thirteen in May, three light ones early in June, none in July or August, but ten in September, potatoes having been killed rather early in that month. One August frost is never unexpected and even this year I understand there was a July frost on certain low-lying river flats. However, a light frost is not killing to hardy crops and even when potato tops are cut to the ground, they quickly come on again. This is written the second week of November. The weather is now exceptionally pleasant, with many still days. The usual October weather is coming this year in November. The ground remains frozen, however, since a series of sharp frosts at the last of October and beginning of November, when the mercury dropped to three degrees, putting a stop to fall plowing. Taking the year through, the percentage of sunshiny hours is large. Daylight is long in summer but short in winter dropping to a minimum of something over seven hours in December. On

(Continued on page 83)

To the Dominion Grange

By PETER McARTHUR

My interest in the Grange goes back to my boyhood days. One of my brothers was a member and one of his first purchases was a box of fine raisins. As the price of them was a secret and it was understood that they were cheap I felt at liberty to make very free with them. Every time my stomach bit me I would sneak into the house for a handful of raisins. While the box lasted I had a very high opinion of the Grange. After it was empty I lost interest and absence from the country during most of the years that have intervened kept me from knowing the later development of the organization. But somehow I have gathered an impression that the political power of the Grange passed with the passing of cow-hide boots. In the days when the opinions of Grangers were backed by a well tallowed boot occupied by a foot with an earnest purpose they had weight in the community. Though we are now living in an age of fine shoes and gentler methods Grange opinions can still be effective if the politicians are made to understand that Grangers' opinions are always backed by Granger votes. At the present time there seems to be some doubt on the subject and as the statesman poet, John Hay, said:

"You can resolute till the cows come home,"

but if your resolutions are not backed by your votes at election time you will simply be wasting your energy.

I am anxious to know whether the Grange is a power in the country and there is only one way of finding out. I wish you would keep your eyes open when the different sessions are adjourning and also when you are at your hotel to see if there are pleasant, well-nourished gentlemen mixing with the members and inviting the prominent ones to lunch. These sleek and greasy citizens will be lobbyists for the Big Interests who never fail to be around making themselves agreeable when anything is being done that may affect those whom they represent. If one of them approaches you do not fail to let him have his way for you will never know what it means to be fed, flattered and fascinated until you have been entertained by an expert lobbyist. If you see such men hovering about, all smiles, put steam in your work for by this sign you shall know that you are doing something effective. On the other hand, if the members of your organization are left to themselves and no one visits your meeting but an occasional reporter who drops in to ask a few questions of the secretary and excuses himself for not waiting to hear an important paper by some prominent agriculturist on the score that he is assigned to report a church festival or to get the resolution passed at an Orange Lodge you may as well come back home and attend to the chores for the work of your meeting is of no importance.

$1,000 For Country Teachers

The Real Source of National Greatness Lies in the Little Red School Houses of Canada

By E. C. DRURY

The educational systems of Canada are under fire. Recent movements in Ontario point to increased demands for the Universities and High Schools. Statistics show that about 5 per cent. of country children go on for higher education. The salaries of the rural teachers are too low, yet the country ratepayers are already too heavily taxed. Consequently our schools are being guided by immature girls in many cases. Give the teacher a salary of $1,000 and let the Province bear the extra cost, and the men of the nation will accept the situation as a life work, and become real leaders in that rural culture that alone makes for national greatness. This has been the contention of Farmer's Magazine from its inception and we are gratified to learn that so practical a thinker as Mr. Drury endorses the idea. This article contains the real essence of the whole matter. This logic is convincing and his conclusions irresistible. Mr. Drury graduated from the O. A. C. in 1900. Of his class of 17, only 3 are now actively engaged in agriculture. Every trustee, every parent, every lover of country life should re-read this article. As he sees it, the consolidated school is not the solution.—Editor.

IF ANY CLASS more than another, in its own interests and in that of the commonwealth at large, should be provided with a high average of education it is the farming class, which in our country at any rate, constitutes nearly the total population of the rural districts. This is true for several reasons. It is true that out in the quiet country, surrounded by the sweet sights and sounds of nature, and in the simple social life of the rural neighborhood, it is possible to develop the sweetest, sanest and strongest of natures. The country is the ideal place for "plain living and high thinking." On the other hand, there is the undoubted tendency of isolation, sordidness and monotony to dim the faculties of the mind, narrow the vision, and in the end, to result in brutishness. Most of the great minds of the world, in the past and in the present, have been country-bred. On the other hand, the most brutish and ignorant peasantries, races represented by that tragic figure of "the man with the hoe," have been the products of rural life. To quote words used of another subject, country life seems to have in it "the savor of life, unto life, or of death unto death." The difference between these two results is found, not only in the material well-being of the people, for sordidness and narrowness are not the exclusive characteristics of the poor, but in the mental outlook and culture of the individual and the community. In other words, the amount and the character of rural education, while not the only determining factor by any means, has much to do with deciding whether a rural population shall on the one hand reach the ideal rural life, with all it embodies of sweet simplicity, sanity and strength, or on the other retrogress into an ignorant, sordid peasantry, without ambition and without hope.

To a much greater extent than the townsman, the countryman is thrown on his own mental resources. Country life furnishes it is true, mental stimulation in abundance, but these are quiet, unobtrusive, uninsistent in their nature, and make no impression except on a mind either naturally or by training, prepared to receive them. A man may live all his life in the country, and never be stirred by a beautiful sunset, by the glorious coloring of the changing autumn woods, or the marvel of the springing grain. He may spend his years controlling and directing the wonderful life-processes of plant and soil and animal, and yet never have his curiosity aroused enough to enquire as to the why of the things he does, or the results he obtains. It was of a countryman that Wordsworth wrote:—

"A primrose by the river's brim
A yellow primrose was to him,
And it was nothing more."

The mental life of the countryman, then, largely depends on his own receptiveness, individually and collectively. Properly prepared for, it should be the richest and truest of which man is capable. Unprepared for, it may sink and degenerate until the people, through sheer mental inanition, become almost brutish, as is evidenced in the case of some of the European peasantries.

The townsman on the other hand, while surrounded by unbeautiful things, by smoke, and dingy walls, and glaring pavements and harsh noises and unsavory odors, is never in any danger of that lethargy of the mind which is the bane of country life. His mental stimuli, while inferior, are insistent—thrust at him as it were, so that he cannot avoid them. The roaring crowds; the traffic; the day's news handed from mouth to mouth as he goes to and from his work; much discussed municipal questions; the labor union or the club; all these provide mental stimulation of a sort. Under these circumstances the mind cannot be inactive. It is because of an unconscious appreciation of this condition that so many young people, when they leave the country for the city, give as their reason "There is more life there." It is true that the surroundings of the townsman are inferior in their mental possibilties to those of the countryman, producing as their ultimate result, that shallow, fickle and irresponsible type of mind, which, as a matter of history has always made a city crowd dangerous—a type quite different from the quiet strong, sane type which is the best product of country life. But the fact remains, in spite of this that in the city there is a mental life, which thrusts itself even upon those who have absolutely no training, while in the country, though the conditions are such as to lead the highest and best thought-life, the stimuli have to be sought for, they do not compel attention, so that the man of untrained mind may miss them altogether, and become the prey of a deadly mental lethargy. For this reason, for his own sake, the education of the countryman should be even more carefully attended to than that of the townsman.

But not alone for his own sake should the countryman be carefully educated, and a high standard of average intelli-

The little one room school should be a neighborhood centre.

Starlinck Consolidated School in Manitoba.

gence be carefully maintained in the rural districts. The country furnishes the very life of the whole community. From it come two necessities, food, and racial stamina. The townsman cannot argue that it is no affair of his what conditions are in the country. If the land is misused through lack of intelligence, or if, on account of a poor social life, people will not stay in the country, the townsman pays the piper in an increased cost of living. Statisticians have proved, over and over again, that the enervating conditions of city life would speedily result in racial deterioration, and finally in extinction without the constant influx of fresh blood from the country. The quality of the country people is of vital importance to the townsman, and, if the country cannot supply the means necessary to a proper system of education, it is both expedient and just to call upon the towns for the necessary help.

There has been a growing feeling for many years that there is something wrong with our rural schools. The average boy or girl as they finish their course in these schools, generally in their early teens, cannot be said to have any real education They have learned to read, write and cipher, for the most part very indifferently. They have crammed enough facts and dates in geography and history to pass an examination— and forget them as quickly as possible once the examination is passed. They have had a few dozen lessons in nature study or similar subjects, given generally by a teacher who has no real interest in the subjects other than to fulfil the departmental regulations, and who, because of his own lack of enthusiasm in the matter, fails to arouse any enthusiasm of natural observation in his pupils. But these boys and girls, unless they are of exceptionally active mind, have been given little impetus toward real mental culture. For one thing they have not developed the reading habit. It is not an uncommon thing, and I personally have seen several cases, where a young man or woman, after having got all our rural public schools could give them, have confessed that they had never read one book after they had left school. They have not learned the accuracy that a respectable grounding in arithmetic should give them. How many of our public school pupils could extract a square root after having been out of school for five years? And with this meagre smattering of knowledge, and with no mental culture whatever, these boys and girls are turned out to do the best they can in forming a rural social life.

Where the High Schools Fall Down

And this is the educational preparation for life that our country people are receiving. The influence of the high schools does not reach them except indirectly. A very small proportion of rural common school pupils ever reach the high school. In 1911, there were 212,537 pupils in the rural common schools of the Province of Ontario. In the same year there were 11,714 pupils of rural origin in the High Schools, Collegiate Institutes and Continuation Schools. Very few, even of this small proportion who attend the secondary schools, return to the country. For the most part they go on to the secondary schools with the distinct object of preparing for the University or for some urban calling. Of those who finally reach the University practically none return to the country, and even those who have taken a course in our Agricultural College are rare figures in country life, for the most part preparing for professional agriculture in some form, and living in town to practise it!

Thus the country districts are left, not only with a low average level of education and culture, but without the advantage that would come from a few leaders of superior training. In the cities and towns is gathered the whole body of the educated people, but out in the country there is not even a fair proportion of educated people to act as leaders. Is it any wonder, under these circumstances that the social life of the country is barren, and that the people of the rural districts are unprepared to exercise their proper influence on the affairs of the nation? When we remember that it is in the conditions prevailing in the country that men have the greatest need for mental culture, in order that they may make the most of their lives, the condition of our rural districts becomes sad indeed Is it not possible that we are nearer to the condition of the peasant than we are to that of the intelligent independent yeomanry that should be our ideal?

The Rural School Must Furnish Men

It is clear that if the educational level of our rural population is to be raised, as things are at present, it must be through the medium of the rural public schools. It may be that some time in the future, when we are wise enough to remove the fiscal and economic burdens that now hold him down, the occupation of the farmer will become profitable enough to attract men of superior education, though until that time comes we may not even expect to see the graduates from our Agricultural colleges on the farms. At the present time, however, we can expect little help from our Universities and High Schools, in raising the intelligence and culture of the rural neighborhood. The public schools, however, we have, and the question is, how can these schools be so improved as to give a reasonable amount of educational culture to the 95 per cent. of their pupils so as to better fill the peculiar needs of the rural community?

Consolidated Schools Not the Solution

At least two plans to accomplish this end have been proposed in Canada. Some nine or ten years ago we had the movement for the Consolidated Rural School. It was proposed that instead of little one-roomed schools scattered everywhere through the country, there should be a consolidation of the present school-sections, four or five sections being thrown together to make one larger section, with a graded school of four or five rooms and as many teachers, and covered vans to convey the children to and from school, over the longer distances made necessary by the larger section. This plan was launched under powerful auspices, and with strong financial backing. Several model Consolidated Schools were established and run for a number of years. The idea, however, never grew, and now nothing is heard of it. It had considerable merit, but unfortunately there were more than overbalancing defects. There is no doubt that better schools and teachers and more efficient organization and equipment would have been obtained in this way, but there were three very weighty objections. In the first place, owing largely to the cost of conveying the children to and from schools, involving the employment of more teams and drivers than there were teachers, the expense of running these schools was bound to be enormously high, and out of all proportion to the increase in teaching efficiency. In the second place, there was a very real difficulty in the danger to the health of the children involved in a drive of four or five miles before and after school, during the severities of the winter months. I remember seeing, in one of these model consolidated sections, a school-van which had not finished its rounds at 6 o'clock in the evening. Some of the children had been on the road two hours. There are

(Continued on page 88.)

Harvesting An Odd Sea Crop

How Some Farmers of Nova Scotia Make Money Out of Eel Grass

By W. A. CRAICK

We have read much of picturesque Acadia, but perhaps few of us know that one of the most unique pictures along the coasts of this historical Province is a farming scene. We have here a story of the harvesting of the eel-grass, a sea-crop out of which many Nova Scotia farmers make considerable profit, and which has a surprising variety of commercial uses. This article will be appreciated by every reader who is interested in farm conditions and practices throughout the Dominion. —Editor.

WHEN one speaks of the harvest of the sea, the thought naturally turns to the operations of fishermen. The catching of fish of all sorts and sizes from shellfish to the great tuna itself is suggested. Methods are very different from those of the agriculturalist; the life is decidedly unlike that of the farmer, whose crop usually comes up just where he sows the seed and just about when he expects it, and there is much more danger and hardship to be encountered.

Yet it is not of the harvest reaped so picturesquely by the fisherman that this article is to treat. The sea produces many things besides fish, and it is of quite another kind of crop than a boatload of the finny tribe that I am writing. On the borderland between sea and shore, harvested alike by farmer and by fisherman, rising from the ocean bed and nourished by the salt water, there grows a product that is harvested and marketed very much like some field crop. It is familiarly known as eel grass, though it probably has some longer and more scientific name in the text books.

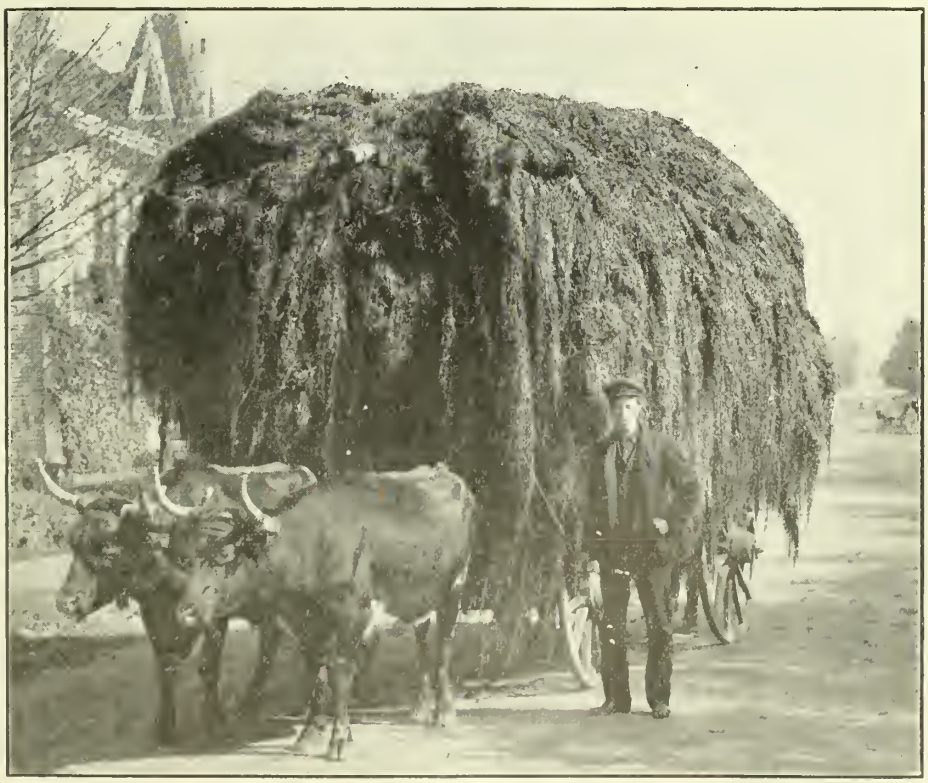
If you should chance to wander along the water front at Yarmouth, N.S., almost any day in August or September, you would probably notice men busily engaged in loading great oblong bundles on the steamer that plies between that port and Boston. On closer inspection it would be found that these bundles consisted of a great quantity of compressed material of a dark brown color, resembling strips of ribbon, twisted and intertwined. The substance is dry, but the fibres are strong and springy, and the whole smells strongly of seasalt. This is the eel grass as it appears when it is being shipped to market.

What is eel grass or sea grass, as it is sometimes called? To describe it most graphically, one may best compare it to long, narrow strips of thin ribbon, from four to six feet in length and from an eighth to a half inch in width. It grows on the flats where there is an ebb and flow of tide, being covered and uncovered as the water rises and falls. It starts to grow in the spring of the year, and attains maturity about the 1st of August. Then it practically reaps itself, for it becomes no longer strong enough at the root to withstand the pull of the tide and breaks off. It is rolled up on the shore at each high tide, where it becomes brown and dry in the sunshine.

For many years no use was found for the sea grass, except as a fertilizer. It lay in piles along the edges of bays and indentations, and was allowed to dissolve away in dust. No one was clever enough to devise any means of putting it to practical use. Then one day its adaptability as a filling for mattresses was tested. It seemed light, dry and springy. Presto, it filled the bill. Quantities of it were baled and sent over to Boston, where it became a favorite material in the manufacture of a cheap grade of mattress. While the latter did not prove to be able to retain its elasticity very long, yet it was good as long as it lasted, and a regular market was established in Boston for the sea grass. Farmers near Yarmouth began to collect this product of the sea, and, while it did not take much to supply the demand, yet the traffic supplemented their other earnings and was not to be despised.

The procedure now, and it is a common sight in August, is to gather up the heaps of eel grass from the shore and to spread them out to dry on the neighboring fields. As a rule the grass is only turned once. Too frequent turnings are apt to twist the strands and get them into "niggers' heads," which spoils it for the purpose for which it is intended. When dry, the grass is loaded on ox carts, precisely like hay, and is conveyed to the barns, where it is stored. Then, as the material is required, it is baled up, usually by means of power developed by a gasoline engine. The bales weigh from 150 to 200 pounds, and the material is dealt in by the ton, just the same as baled hay.

While for some time eel grass was used almost exclusively in the manufacture of mattresses, latterly it has been put to another and more scientific use by a big American manufacturing company. This is what is known as "builders' quilting." It has its greatest utility at present in this direction. The quilt-



Bringing home the harvest of the sea.

ing is a very simple thing in itself. It consists of two sheets of strong, flexible brown paper, between which the dried eel grass is placed in layers. The whole is "quilted" in just the same way that cotton batting is made into comforters for beds. The builders' quilting is used for making houses warm in winter, being spread over the walls as construction proceeds. Incidentally it serves to keep houses cool in summer. But between floors and partitions it deadens sound and in refrigerators it provides an almost perfect insulator.

The scientific explanation of the utility of eel grass quilting as a non-conductor of heat and cold lies in the fact that it is full of what are technically known as dead-air spaces. The criss-crossing of the flat pieces of grass forms tiny spaces all through the filling. These contain air, which is unable to escape or come in contact with the outside atmosphere, and is accordingly "dead." The dead air will not conduct heat, and as a result the quilting is strong to resist changes in temperature. In addition, eel grass possesses other qualities that are of advantage in this connection. It has been proved to be impervious to decay when put up in this form. It does not harbor insects or vermin, and what is perhaps more important, it will not carry fire. It chars flame.

Beyond this there are other uses to which this sea product has been put. Furniture manufacturers have not only found it of value in upholstering, but have also put it to use in rubbing down furniture, a bunch of it having the same qualities as very fine sand-paper. Carriage manufacturers also put eel grass into the seats and cushions of the vehicles they make. Indeed, there are many ways in which it is of commercial value, and the dark brown heaps of it which seemed to cumber the beaches in many a lonely Nova Scotian bay or harbor, are now beginning to fill a useful purpose in the economy of human life.

It would be untrue to say that any farmer or even any dealer in eel grass is making a living out of handling it, for the demand is very far short of the supply, which is seemingly inexhaustible. Yet the task of collecting, baling and shipping this material helps out the income of several people in Yarmouth County, and may yet become a more important source of revenue. It is usually undertaken in spare time, and thus represents so much to the good. There is no labor required in cutting the grass or in sowing seed. Nature does all that. Man's part is simply to take what nature so generously holds out to him.

To give some idea of how much can be made from a crop of sea grass, an old man at Wood's Harbor is reported to have collected sixteen tons of it in one summer. On this he realized $9 a ton, which represented a pretty fair return for a few days' work. Roughly speaking, during the season about a hundred men and quite a number of ox teams are engaged in the business in and around Yarmouth, from which port upwards of five hundred tons are shipped annually to Boston.

The harvesting of eel grass is one of the small, out-of-the-way industries of Canada. It seems to illustrate primarily that some use may be found for practically every natural product, and that eventually a market may open up for the most unlikely substances. It is a unique industry; probably in no place else in the world is it pursued on such a scale as on the east coast of Canada.

A Ball of Blue Yarn

A Tragedy of French Canadian Love and Cruel Deception

By May Harvey Drummond

The author of this quaint French Canadian romance is the widow of the late Dr. Drummond, who made the "Habitant" so popular in poem and story. She has carried into this humble setting of French-Canadian life all the warm fascination of the race. The picturesque environment, the ardor and fidelity, of the characters of the plot and the charming simplicity and directness of its treatment give the "Ball of Blue Yarn" an individuality that pleases. It leaves the reader with a whiff of pine woods, the hush of northern solitudes and the warmth of a pleasing fireside. To add to the interest of the story the illustrations are by Mr. C. W. Jefferys, president of the Ontario Society of Artists. All rights are reserved.—Editor.

THE St. Lawrence was indeed a deep, dumb river that day, and the voyageur making his way up in his birch canoe, felt oppressed with the heat and stillness.

For three years he had worked in far Labrador, trapping for the Hudson Bay Company, and now, with six months' leave, was going home to try and comfort the old mother for the loss which had made him fatherless.

He was paddling close to the shore, his mind full of the meeting so soon to be, when something fell from an overhanging rock into the water, and broke his reverie. It was a ball of bright blue yarn, and looking up quickly to see from where it came, Jean St. Sylvestre beheld a girl's laughing face peering over at him.

Adèle had watched the progress of the canoe up the lazy river, wondering idly who the occupant might be, and when it glided past her resting place she could not refrain from leaning over to get a better view of the handsome face and kneeling figure.

With a deft movement of his paddle, Jean drew the ball of yarn to the side of the canoe, and picking it from the water, tossed it, with a smile, to the girl above.

"Tiens, Mademoiselle! I was just in time, n'est-ce-pas?" He said, as she thanked him in voluble French fashion. Then he raised his straw hat to her and resumed his paddling.

Adèle's cheeks were bright and her heart beat fast as she tried to resume her knitting, but the blue stocking was destined to little progress that day and her eyes scarce left the canoe until it had vanished round a bend in the river. Then she arose with a sigh and went slowly homeward along the river shore.

The girl was one of a large family and had early been trained to work, but her dreamy nature demanded solitude at times and when the want became oppressive, she would take her knitting as an excuse, and steal away to the river side, there to build the beautiful air castles common to youthful dreamers.

This habit of hers was no secret to the family and she came up the little path to the house to meet the usual volley of chaff from her brothers.

"Say, Adèle," cried Thomas, the wag, "who was the chap you were talking to down there?"

Adèle started guiltily, but quickly recovering herself, with a toss of her head said, "I wasn't talking to any one," passed them all to take refuge with her mother in the kitchen.

Jean, meanwhile had reached his destination, and the canoe safely beached, was trudging slowly up the little rising which led to his mother's house. She did not know of his coming, and the tin dish of chicken-feed in her hand, fell with a clatter to the ground as Jean vaulted the low wire fence and clasped her in his arms.

"Ma mère, oh ma mère! How thin you have grown!" He muttered brokenly, as he gazed at the dear face, while she could do nothing but weep, such passionate tears as no one in all Beauharnois had seen her shed. With Madame St. Sylvestre, laughter was for everybody but tears were sacred and when her husband had died, her calm white face with its far-away wintery smile, astonished the neighbors, who could not guess

that beneath the icy exterior flowed a raging torrent of grief.

"Come my son," she said at last, "I am so happy to have you once again that I have forgotten how hungry and tired you must be."

With his arm about her, they passed into the house where the old woman hurriedly drew up the most comfortable chair for Jean that he might sit and smoke reposefully, while she prepared a hasty supper.

Words were few between them for neither felt it possible as yet, to speak of their great sorrow, and, except for a stray question from the mother as to the hardships of the journey down, and brief responses from Jean, who was not one to complain, the meal was eaten in silence.

When the dishes were washed and put away, Madame St. Sylvestre took her bonnet from the peg, and put it on, seeing which, Jean rose, knocked the ashes from his pipe, drew on his coat and followed his mother through the front door.

Instinctively they chose an unfrequented path to the little Catholic cemetery on the hillside through which they passed, the mother leading the way to her husband's grave. There, with all the compassionate love a woman feels for her fatherless son, she put her arms about Jean and drew him to her as though she would shield him from all further misfortune.

"Mon pauvre garcon! This is what you have come home to," she sobbed, and Jean kissing her gravely, replied, "Ma mère, I still have you, thank God! And you must let me comfort you a little for what you have lost. I will not go away any more but stay and work here to be near you."

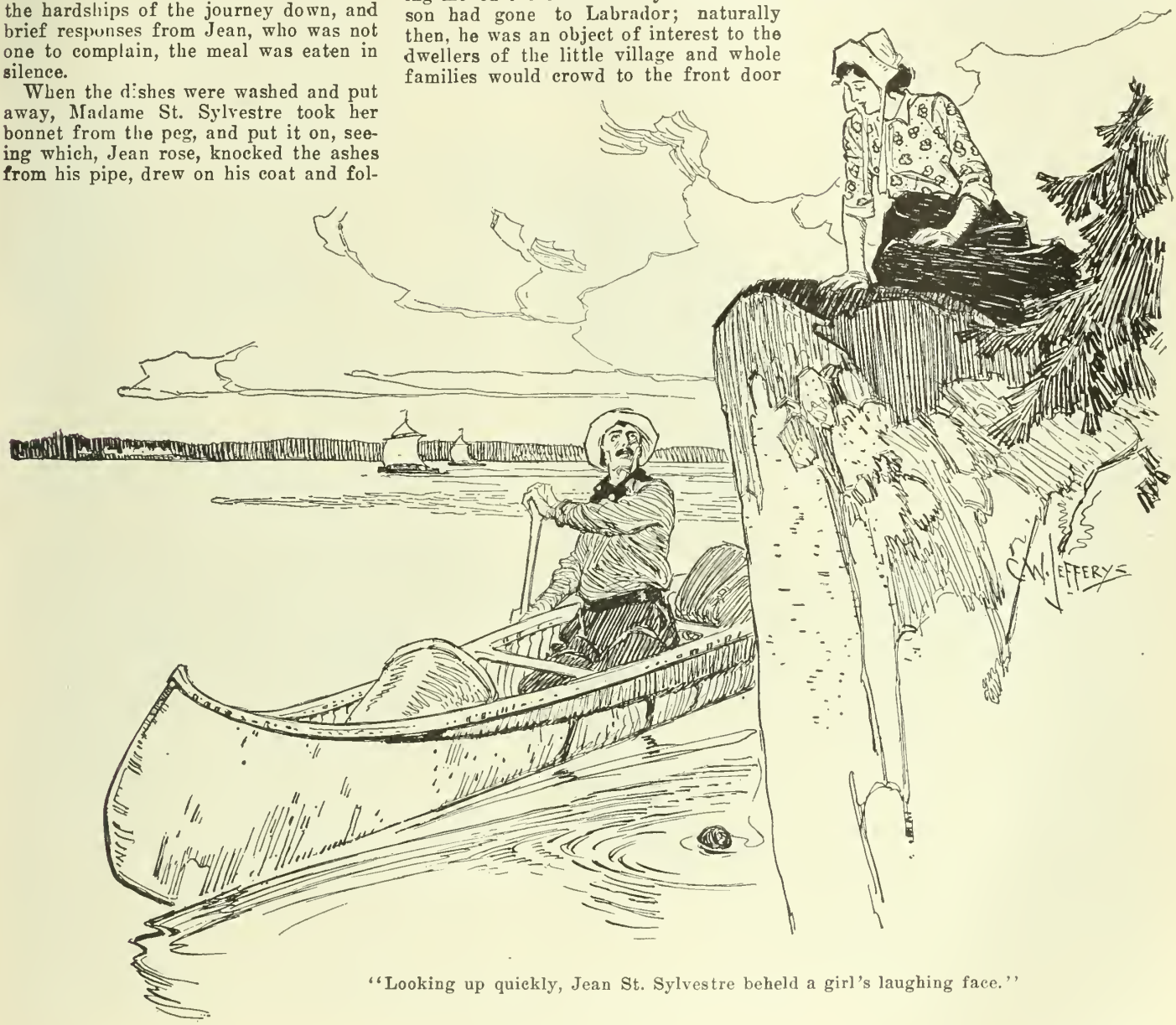
For answer Madame St. Sylvestre pressed her son's hand, she could not speak and for a while they stood thus, in sad silence; then, kneeling by the grave, they said a prayer for the repose of the beloved one's soul, and rising, turned slowly homeward.

Jean was comparatively a stranger in Beauharnois, his father and mother having moved there but shortly before their son had gone to Labrador; naturally then, he was an object of interest to the dwellers of the little village and whole families would crowd to the front door if it was rumored that Madame and her handsome son were passing up the street; but of all this Jean was thoroughly unconscious and would frankly return the gaze of the curious without a single egotistical thought.

On Sunday morning at the church door, he met again the girl whose ball of wool he had rescued from the river. Adèle was in the midst of a family group and might have passed unnoticed had not her father addressed Madame St. Sylvestre. An introduction between Jean and the entire Martin family resulted, and this time the man felt himself unmistakably attracted by the girlish face, blushing so rosy red under his frank gaze.

They walked home together and before the door of the St. Sylvestre house had been reached, Adèle had forgotten her embarrassment and the two were on a footing of comradeship, already.

Jean, in bidding her good-bye, added a request for permission to visit her, which was readily given, and when he followed his mother into the house, his determination to give up a roving life and settle in Beauharnois, had become fixed.



"Looking up quickly, Jean St. Sylvestre beheld a girl's laughing face."

"Tiens, Adèle! That's the best one yet!" Thomas who was walking some yards ahead called to his sister. "He hasn't bandy legs like Napoleon, nor cross eyes like Narcisse Dubois. Better take him Adèle."

"Tais-toi, stupid!" returned his sister, not very vexed, however, "he hasn't asked me yet.'

"Oh! but he will!" continued the rogue, wagging his head with the air of

an elderly sage. "When a man looks at everybody and sees only one girl, its easy to know what's the matter with him."

"You are too wise for your age, Thomas, mon cher, better go slow for already I see the hair on top of your head getting thin."

Adèle spoke gravely and Thomas with a little frightened gesture, took off his cap and patted the top of his head to reassure himself. At this they all laughed, and the boy, covered with confusion, ran round to the back of the house to escape further teasing.

Jean wasted no time in making use of the permission given him by Adèle and soon became a constant visitor at the Martin house, where he was made welcome by all. Sometimes, when the night was unusually fine, he and Adèle would wander down to the scene of their first meeting and there, unobserved, revel in the deep confidences of unacknowledged lovers, while the wise old river flowed silently by, bearing away into the great beyond their tender secrets.

The end to this happy state of things came at one of the village dances when Adèle in a spirit of mischief, showed overmuch favor to Narcisse Dubois, and Jean, outraged and burning with angry jealousy, had rushed out into the night where, under the bright starlight, lovers' hopes and fears played tag with his heart while he made his way home scarce knowing what he was doing.

Madame who sat by the fire knitting, turned in surprise as her son entered "What brings you home so early, my Jean?" she asked anxiously. The man flung himself into a chair by her side and lit his pipe before replying.

The mother waited anxiously. She knew that the confession long expected was coming now, just as soon as that pipe began to draw aright.

"Mother, I love Adèle Martin." he said with startling abruptness.

"And she loves you, my son," replied the old woman calmly.

"I don't know, mother," he said, the fears coming uppermost as he saw again the smiling face raised to Dubois.

"You can find out, Jean. You are not a woman." Madame St. Sylvestre smiled. "You could bring your bride here," she continued, "and I could find a little corner somewhere else; an old woman like me wants but little."

"Turn you out of your own house to make a home for my wife. Ma mère! for what do you take me? I would not marry even Adèle on such terms!"

"Then let your bride share my home dear boy, for I begin to feel the weight of household cares heavy on my stooped shoulders and would willingly give place to a younger woman."

Jean gazed tenderly at his mother. He was not quite sure that she had spoken the truth, but she was poking the fire and no shade of emotion troubled her fine old face. Here then was a solution of the financial difficulty and he would settle the rest with Adèle to-morrow.

Tenderly he stooped and kissed his mother.

"Goodnight, ma mère, you are one of God's good women," he said and strode from the kitchen.

When she hear the door of his room shut, the old woman stooped over the fire, making it safe for the night, and the tears which fell hissing on the smouldering logs, were an offering to the Virgin Mother of Sorrows and Renunciation whose image stood on the mantel above her head.

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A few days of restless anxiety followed, for Jean had been foiled in every attempt to see Adèle alone. Her manner had lost all its former ease and "bon camaraderie" and his appearance at the Martin house was now the signal for a sudden access of zeal in household affairs which kept the girl always at her mother's side.

But his day and opportunity came at last and Jean was not slow to seize it. He had walked over in the evening to find all the family with the exception of his sweetheart and her mother away on a holiday jaunt to the races at Sorel.

After the few formal words of greeting had passed, Madame Martin, on pretext of a cake in the oven which must be watched, left the young people alone on the front porch. Adèle rose to follow her mother, but Jean intercepted her path and his blue eyes gazing down on her with loving determination, told the girl more plainly than words could have done, that further coquetry was useless. Beneath that look of reproachful love, she could not but obey Jean's silent request and turning took the path to the river. At the old trysting place they stopped as if by common consent and stood awhile in silence. The man was the first to speak, and in a voice low and subdued by emotion, he said.

"Adèle, are you angry with me?"

"No." came the whispered answer.

"Will you be angry with me if I tell you something?"

"What is it?" she asked brokenly.

"Do you think you will be angry?" persisted the man.

"No."

"Adèle, I love you dear—you are the one woman in the world for me. Would you be afraid to marry me, little girl?"

"Oh no, Jean!" and the girl, frank enough now, smiled at her lover's humility.

Then the strong arms went around the slender shoulders and words of love came thick and fast, each one an easement to the big heart of him who had suffered so these past few days.

The engagement was but brief; there was nothing for which to wait since Adèle had consented most willingly to share the home of her future mother-in-law and Jean, with this assured, could earn a comfortable living at the new sawmill; so early in the fall they were married. There was the usual wedding feast and speech by Monsieur le Curè, after which the couple, followed by a shower of rice and old shoes, drove off in a borrowed buggy to spend a brief honeymoon in the quaint old village of Chateauguay.

As the vehicle disappeared from view, Thomas who, with his hands stuck in his pockets, was watching it, turned to his mother and said solemnly, "I always knew it would come to this." And the tears which had stood in Madame Martin's eyes, fell and gave place to smiles.

• • •

Jean and his wife had been established about a month in their home when news went around that the saw-mill would be closed during the winter. Financial depression was the reason advanced and for that Jean cared not a straw. The vital thing for him was where to find work? He could not live with his wife on his mother's slender means, that was clear but where to find suitable occupation a problem.

It is true the Hudson Bay Company had offered him many inducements to return to their service, all of which he had put aside, thinking that if the worst came to the worst, he could apply to them later; but the long parting from his young wife which such a course must enforce, was anguish to be faced only in case of dire necessity.

Another month spent in vain search, brought to him the certainty that this dreaded resource was the inevitable one, but how could he summon enough courage to tell Adèle? And it was only when he had signed himself over to the company, that he brought himself to face the terrible task.

All unknown to Jean, both wife and mother had surmised what was to be their portion, so, when at least with that gentleness which strong men use to those whom they would protect, he told Adèle of the parting to come upon them, her colorless face was her only sign of emotion.

When he had finished she said mechanically, "When must you go, Jean?"

"Next week Adèle. It is soon, is it not?"

A hot tear fell from the girl's eyes, and dropping on the man's hand, made him look up hastily.

"Adèle," he whispered brokenly. "My Adèle." And clasping her in his arms, he lavished on her all the wealth of his great love, while she, resting there passive with fast flowing tears, fought the great battle of her life and won,—never pleading with him to stay since his mind was made up, his pledge to the Company given and such pleading would but add to his trouble.

• • •

Jean had been gone six months when the Hudson Bay factor, sitting in his log hut working on a pair of "bottes sauvages" beheld him enter, closely followed by an Indian carrying a large pack.

"Hello! St. Sylvestre. Glad to see you old man. Sit down, sit down; you must be dog-tired," said Ben Thorpe, as he rose to greet his visitor.

"Good day, Thorpe," said Jean, extending his hand which the other shook

with overmuch warmth. "I've done well for the company this time and came down to get my letters and my discharge at the same time. Give me my letters, old man, I can't wait another minute for news from home."

"Sorry, Sylvestre, but there are no letters for you."

In the factor's eyes there lit a gleam of satisfaction which Jean, overcome with emotion did not notice.

"No letters for me! Why Thorpe, you are surely mistaken?" exclaimed the unhappy fellow, unable to relinquish the hope which had made life possible during his six months of exile.

"Quite sure!" replied Thorpe, then added with a show of reluctance, "Fact is, I'm afraid there is bad news in store for you, Jean, and you must prepare yourself for the worst."

"Prepare myself for the worst," echoed the trapper. "What worst? Tell me———tell me!" he went on wildly, seizing Thorpe by the shoulder.

"Sit down," said the latter, and Jean obeyed. "News came to me through your friend Narcisse Dubois that there had been an epidemic of diphtheria in Beauharnois and your wife and mother had both died of it."

Sylvestre bowed his head in his hands and groaned aloud.

"Oh my God! and is it for this that I have worked and waited ——— worked and waited?"

The words were reiterated again and again as the man swayed to and fro on the seat, grappling with the horror which had overtaken him and which was more than he could bear, for he lost consciousness and would have fallen had not Thorpe caught him and with the help of the Indian, carried him to a rough bunk in an adjoining room.

"Hope it hasn't killed him!" muttered the factor. "We can't afford to lose such trappers as he just now. If he dies I'll be pretty badly sold, because money might have done the job just as surely."

Jean did not die, and in a few days was able to leave the fort. Accompanied by the faithful Indian, he made his way back into the wilderness and this time no hope, only a blank despair accompanied him. Only a weary life time to be lived through because the creed of

"Snatching the little oil lamp from the bench close by, Jean held it to the man's face."

his childhood told him that the manner of his release must be left to the God who gave him life. Silently he worked in that lonely land, never returning to the fort unless obliged by necessity, and then remaining only long enough to render account to Thorpe of his work. So he lived for well nigh eighteen years, during which time his determination to die in the wilderness of Labrador had wavered but once. That date he had marked with a red cross on his rough birch-bark calendar.

One night, trudging wearily home on his snowshoes, a couple of fur-bearing animals over his shoulder, Jean almost stumbled over the prostrate form of a man, which was lying across his path. Hastily throwing the carcases on the snow, he stooped over the man and sought for signs of life. The heart still beat, it was true, but there was no consciousness and the lower limbs were severely frozen.

"They walked home together."

"Nothing for it but to get him home as quickly as possible," thought Jean, and signing to the Indian who was close behind, to help between them they lifted the large emaciated frame and leaving their spoils where they had fallen, trudged off through the difficult forest path, which the uncertain moonlight rendered still more arduous. Arrived at the little log hut, their burden was gently deposited on Jean's bed of pine boughs and some whiskey forced between the livid lips. All the usual remedies for frost bite were applied, but it was well on into the night before Jean or the Indian dared to light a fire in the stove or think of their own wants.

At last, however, the frozen feet yielded to treatment and the two men, drawing the blankets over their patient, left him to seek food for themselves.

While Jean was still munching the rough supper prepared for him by the Indian, a sigh and slight movement from the bunk sent a thrill of delight through his heart. With one bound he was beside the bed with his ear close to the sick man's mouth in the hope of getting a clue to his identity. A few broken words devoid of meaning or connection and then, a name rang through the hut which sent Jean staggering to his feet.

"Adèle! Adèle!" called the sick man, and again, "Adèle!"

"Snatching the little oil lamp from the bench close by, Jean held it to the man's face, then with a cry of anguish, drew himself hastily away from the bedside.

"Narcisse Dubois!" he muttered hoarsely. "God! what brings him here?"

The flood-gates of memory were down and the ruthless tide poured through his soul, bringing with it all the old jealousy of this man who had oh! so many many years—or was it centuries? ago driven him from the merry dance into the loneliness of the night. But what did that matter since Adèle, too, was dead and nothing left for which to care? Narcisse Dubois had brought the news to the fort, so Thorpe had said. How dare he bring such tidings! "Had I known him as he lay there in the cold he should have gone unsuccoured!"

Thus ran the thought of the tortured man, half crazed with grief unspeakable. He was filled with a wild desire to kill this being who had twice brought pain into his life, and it was long ere his naturally calm disposition reasserted itself and enabled him to resume his duty as nurse.

"It was the beard that disguised him," said Sylvestre, wondering a little that his recognition of Dubois had been delayed so long.

For days Jean remained in the hut, leaving to the Indian the work of trapping. He had schooled himself to listen with outward composure, to the still delirious rambling of the man he had befriended and the frequent repetition of the name which was such sweet torture to hear from those lips. At last the fever left Dubois, and very slowly his normal mind reasserted itself. His first recognition of Jean came suddenly one stormy day when Dubois had lain for a long time gazing at Sylvestre, who sat smoking by the little stove. Suddenly the sick man raised himself on his elbow and in a hoarse, awe-stricken voice asked:

"In God's name who are you?" Jean jumped to his feet.

"Why, Dubois, old man, don't you remember Jean St. Sylvestre?" he asked gently.

"Jean St. Sylvestre!" repeated Narcisse in wonderment. "It can't be true?"

"But it is true, Narcisse. And now you musn't talk any more; you are still very weak."

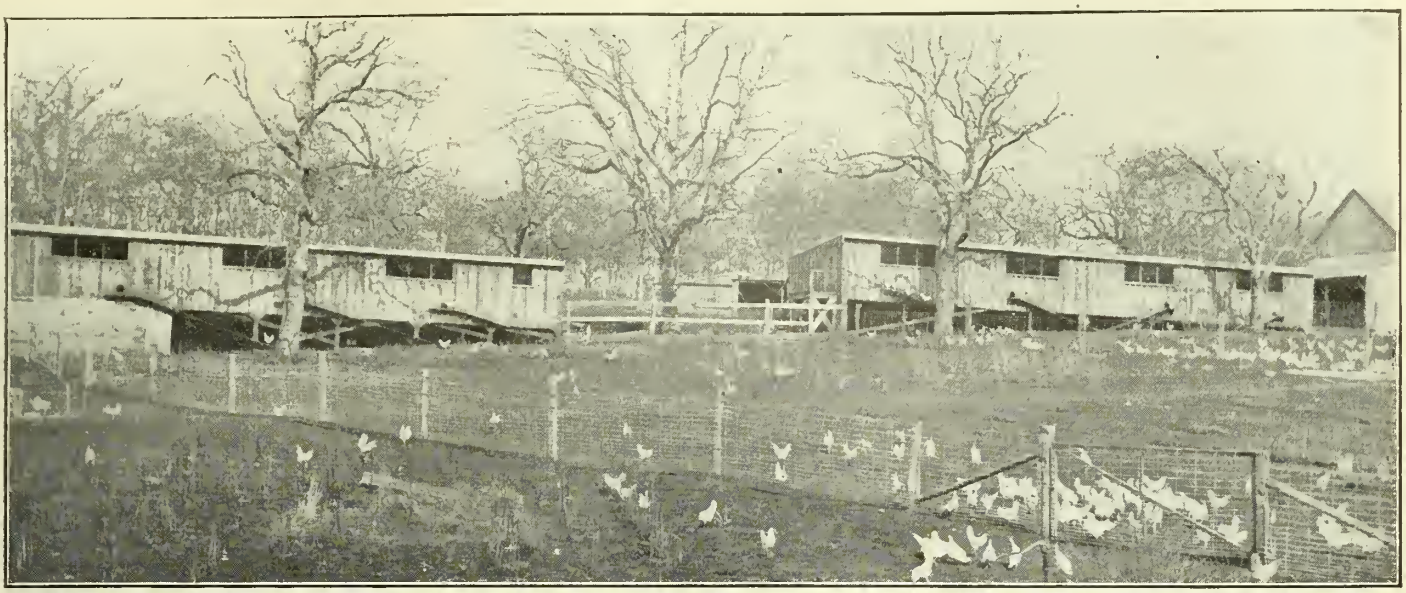
It cost Jean no small effort to silence the sick man, for he hungered with the hunger of starvation to know all that Narcisse could tell, but the invalid had fallen back on his pillow exhausted, and it was not until some days had passed and he was able to sit up in bed, wrapped in a heavy gray blanket that Jean permitted his patient to talk.

"Where did you find me, Jean?" queried Dubois to whom the other told in a few words the story of his finding, and seeing that Narcisse was now strong enough to be questioned, Sylvestre began in his turn. "What brought you here?" he asked.

"I came to see you, Jean St. Sylvestre, though you mayn't believe me."

There was a flush of excitement on the invalid's face as he made this strange assertion, and St. Sylvestre looking at

(Continued on page 73.)



Laying houses and poultry runs on the Braefoot Ranch.

Mixed Farming on Vancouver Island

A Visit to Dr. Tolmie's Farm Where Poultry, Cows and Hogs are Making Money for Him

By T. W. PALMER

While specialists make their marks by directing their energies to some particular line of agriculture, there is always the man in the background who is steadily and surely building up the industry in the development of a well-balanced, economic, mixed farming business. We feel that in this article, dealing with one of the most successful mixed farming plants in the Dominion, we are giving a story of general interest.—Editor.

Four miles out from the beautiful city of Victoria on Vancouver Island lies the farm of Dr. Tolmie, Dominion Veterinary Inspector General. Vancouver Island is well situated for giving to the farmer all that can be desired in soil, seasons and climate. Victoria, called by many the Garden City of Canada, lies on the south end of the Island and is the capital of the Province of British Columbia.

Taking an electric car, one soon reaches the beautiful country where "Braefoot Farm" carries on such a pleasant and profitable business in mixed farming and live stock. The road leading to the farm is bordered on both sides with the beautiful golden broom, which, in spring time so pleases the eye of the tourist. Perhaps there is no part of Canada which will carry to the Britisher keener delights, because of the similar conditions to the British Isles which exists on this Pacific shore.

One is not surprised upon aproaching the house, to find a Chinese servant, for the question of oriental labor in this province has ceased to be a wonder.

The manager of 187 acre farm, Mr. Wright, is as yet in his twenties but his industry, thoroughness and tact in the management of men has meant much to Dr. Tolmie in the financial success of this farm. Mr. Wright had spent his life previous to coming to British Columbia on his father's farm in England. There he learned efficiency and economy. There is little useless experiment with him as his early training has meant that he got the best out of everything he does and the practical side of the theory is always his first concern.

The Farmer's Magazine correspondent met Mr. Wright as he was about to take a trip over the farm on his saddle mare. Upon expressing a desire to visit the farm and to get at the inner working of so well-conducted a place, he quickly dismounted and at once hitched to the buggy to enable us to accompany him.

On our right hand, as we started north. lay the gardens. Here a ½ acre kitchen garden supplied all necessary vegetables and small fruit. Adjoining this was a patch of 5 acres of potatoes. The leading variety was the "Up-to-Date." An alfalfa plot of one acre lay alongside, this being used as an experiment. This crop had done so well this year that two more acres have been seeded down. The third crop of clover was now a foot high on this trial plot so that the future of alfalfa on the island farm looks to be bright.

Dr. Tolmie is an ardent admirer of Yorkshire swine. Many choice animals occupy the V-shaped pens in the yards.

Now as to the farm crops. The first field, attracting our attention was the corn. Here 13 acres of fine tall ensilage corn was already averaging over 10 feet in height. Later we learned that the yield was over 10 tons to the acre, which completely filled the 136-ton silo, besides leaving much for green feeding.

A 15-acre field was sown to oats and peas for cutting for hay. This yielded 4½ tons of dry feed to the acre. Clover hay also yielded four tons to the acre.

Oats grew to profusion, it being common to see the grain 5½ feet high and to have yields of 85 to 90 bushels. Wheat returned 40 bushel to the acre.

Flock of Downs on the Braefoot Farm.

For green feeding besides the crops mentioned, a small acreage of thousand-headed kale and mangels were grown.

There is only about 95 acres of the farm cleared as yet, the balance being broken pasture land, which will in time yield to the civilization of plows and seed-drills.

A visit to the dairy barns, recalled up-to-date methods in cement, stable equipment and feeding conveniences. The cows are in two rooms facing each other with an 8-foot alley between. The herd consisted of 45 head, 33 of which were milking; Holsteins predominate. One Ladysmith Daisy, has a record of 112 lbs. of milk in 24 hours, with butter fat of 24 lbs. She has been milking seven months and still yields 70 lbs. or more per day, which means that she would more than fill a 12-quart pail twice a day. Another Pauline Brooks has a record of 83 lbs.

The Holsteins

The feeding and system of work are all according to the best practices. Morning's work begins in the cow barns at 4.30 a.m. Each cow gets then about 5 lbs. of clover, and after milking 10 lbs. of ensilage, followed by 3½ lbs. of hay. At 9 o'clock the cattle are turned out to pasture where the kale is fed on the grass. At 1 o'clock they are brought into the stable and fed 15 lbs. of ensilage and from 1 to 3 lbs. of mixed oil cake cornmeal, oats and corn in proportion of 3:1:2:2. The feed per cow is regulated by the body weight and milk yields.

At 2 p.m. each cow receives 2½ lbs. of clover hay and milking is begun.

At 4 p.m. they get 10 lbs of ensilage, and at 5.30 the cows get their final feed of 5 lbs. of clover hay.

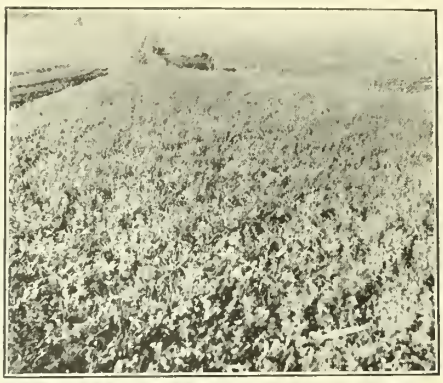
The herd bull is a magnificent Holstein, purchased from the Colony farm at Coquitlam.

The daily ration of the two best cows is:—

Bran	3 lbs.
Ground Oats	4 lbs.
Feed Corn Meal	9 lbs.
Oil Cake Meal	3 lbs.
Fresh Brewers Grains	15 lbs.
Corn Ensilage	20 lbs.
Hay (clover)	15 lbs.
Total	69 lbs.

Believes in White Leghorns

Dr. Tolmie appreciates fully the importance of the hen for in two long pens are seen a choice flock of pure White Leghorns. The first house is a laying house 70 ft. x 16 ft., and accommodates from 400 to 500 hens. The second house is 80 ft. x 16 ft., which is occupied by about 200 March-hatched pullets which were laying about 75 eggs a day. As the market price for these was 70 cents a dozen, it can easily be seen that the returns of $5.00 a day was nothing to be despised. The Braefoot farm will winter in all about 1,000 Leghorns.



The third crop of alfalfa, one foot high, on the non-irrigated land.

The laying houses were built after the plans of the Corning Egg Farm Poultry Houses of Bound Brook, New Jersey. These houses are 5 feet high at the back and 7 feet high in front, with a shanty roof. They face south and the roof, north wall, and ends are covered with asphalt paper. The fronts are boarded up within 3 feet of the eaves. The remaining 3 feet of the front is filled with wire windows, 3 feet high and 9 feet long, so spaced out as to form about half the length of the house. The dropping tables are on the north wall and extend out about 6 feet into the house. Every 20 feet throughout the house a partition comes out from the back wall for 8 feet which is half the width of the house. These partitions form with the dropping tables and perches, roosting closets and break up all draughts that might be in circulation lengthwise of the house.

Feed for Poultry

The poultry is given 8 lbs. of grain per 100 hens per day. In summer the feed is 3 parts wheat and 1 part corn. In winter half corn and half wheat. Besides they get 5 lbs. per day for 100 hens of a dry mash consisting of 30 per cent. each of oatmeal, shorts and middlings with 10 per cent. of beef scraps.

Three times a week the hens are fed a wet mash of very much the same ingredients as the dry mash, excepting that milk albumen is often used in place of beef scrap. Of course the day when wet mash is given, the dry mash is omitted.

The hens have constantly before them in hoppers, shell, grit, bone and anthracite coal clinkers. Fresh water is filled daily into properly constructed fountains. In winter hot water is given the hens to drink. The floors of the laying houses are of double shiplap and covered to a depth of 1 foot or more by straw litter, in which the poultry are fed their grain. The dropping tables are cleaned three times a week, and after cleaning, sand is sprinkled on each table which facilitates removal of manure the next time cleaning out is required.

The nests are in 3 tiers between the windows of the houses about 75 to 100

The first process in ensilage making.

Ladysmith Daisy holds the record for the highest weight of milk for one day from any cow bred in Canada.

nests being in each house. The nests are built in a cabinet form and by simply sliding them out from the wall, the backs are exposed and the cleaning out of the old straw and fumigation of the nest boxes becomes a simple matter.

Above each window is a frame hinged to the top of each window, and hooked back to the ceiling. These frames are covered by heavy canvas and if at any time there happens to be a very heavy wind in combination with hail, snow or rain, which seldom, if ever happens (this part of Vancouver Island being free from these extremes), the frames are simply dropped down over the windows, thus excluding all rain and snow and preserving the litter dry for the hens to exercise in.

Uses Big Incubators

In the cellar, there is installed a 1,200 egg Candee Mammoth Incubator(Hot Water). The incubator, he explained, was the last word in artificial hatching being extremely easy to maintain at a correct temperature and hatching a very high percentage of strong chicks. Hatching strong chicks is a great deal more to the credit of an incubator than hatching quantities of weak, miserable chicks that peg out in great numbers. Last spring this incubator hatched out about 2,000 chicks, all vigorous, healthy birds.

On an adjoining slope stood a row of brooders, lamp heated, but this year a hot water system is contemplated.

The baby chicks are removed from the incubator and put in the brooders where they are kept for at least 36 hours without food. They are then given their first feed of oatmeal and finely chopped hard boiled egg. The tested out eggs are admirable for this purpose. They are fed five times per day. At the end of a week the chicks are given the commercial chick food and they also have a small hopper before them containing commercial chick chop. Pure water is kept constantly before them and changed several times daily.

As the birds become 9 weeks of age, they are removed to the colony houses which are located on free grass range, in which are dotted numbers of magnificent oak trees for shelter and shade. As the chicks become able to digest grain they are given a mixture of cracked corn and wheat.

Turning Disadvantages Into Opportunities

How a Girl Made the Most of an Isolated Life

THE following message published in The *Girl's Own Paper* will be particularly appreciated by the girl on the farm.

I have in mind two girls, both of whom live in rather isolated country districts. One of them has grown nervous, discontented, and unhappy because of so much solitude, so little contact with human beings. The other has learned the use of life and the use of life's gifts. She has learned first of all the benefit and use of work. She raises chickens and ducks and grows green peas. As soon as she had made a little money at this she bought books, so that she might better know the great book world. She studied nature; she knows the feathered folk; she knows the wild flowers, the trees, the stars; she knows the best pictures, etc., so that when she does now and then go to the city, and comes in contact with human beings, they find her full of charm and interest. Life is a joy to her—a healthy active thing—and the days are not long enough to follow all life's interests. She has learned to make use of her opportunities, that is all. She has learned the adaptability and worth-whileness of life; she has learned the use of life.

Here is a girl who complains of loneliness; yet, if she did but know it, loneliness is just the key to the vast treasure-house of books, and to many another treasure-house as well. This girl's loneliness is of no use to her. It lies idle; but another one fits her loneliness to the opportunities that are around her, as a key is fitted to a lock.

I don't know whether you girls had enough tom-boy in you when you were little to dote on boys' books. I did. And of all the boys' books I remember, I believe Robinson Crusoe delighted me most. Here indeed was somebody worth reading about! The story is still fascinating to me, and when I am tired or discouraged with the puzzling difficulties of life, it cheers me up still to sit down and read it. Now a book that retains its fascination for years in this way is sure to have underlying it some vital and inspiring truth. The one great truth underlying the story is, of course, the human possibility of overcoming difficulties. But the

Pauline Brooks has a record of eighty-three pounds of milk in twenty-four hours.

particular fascination of the character of Robinson himself is his resourcefulness, his patient overcoming of loneliness, his clever use of the means within his reach. You remember that first entry in his journal:

"I, poor, miserable Robinson Crusoe, being shipwrecked during a dreadful storm, came on shore on this dismal, unfortunate island, which I called the Island of Despair."

There is loneliness, if you like! Others would have given themselves over finally to the despair; would have died of it and of starvation, and we should have heard no more of them. Not so Robinson. He set about making the best of things, using whatever means lay within his reach; and as he used more and more of them, more and more were discovered to him. This is always so. The treasures of life do not decrease, but increase as we go farther into the treasure-house

Now one does not have to go sailing in a boat to be shipwrecked, nor must one necessarily be cast on an uninhabited South Sea Island to live a lonely life. I know girls who, in the midst of great cities, live lonely desert-island sort of lives, and all for one reason—they have not tried to make use each day of such simple opportunities as lie all around them, because they have not Robinson Crusoe's patient interest in adapting life's opportunities.

Let a man get the idea that he is being wronged, or that everything is against him, and you cut his earning capacity in two.

View of Braefoot Ranch with Mt. Douglas in the background.

My Shen Nung Tribute

A Great Chinese Statesman Praises the Unknown God of the Fields

By LI HUNG CHANG

When I sit down and reflect,
And let my mind and my soul tell me of things so true,
I know that thou,
Most glorious and sublime Shen Nung,
Art the great helper of our people;
The wonderful provider of the world;
The hope of them that have not mines,
Nor great stores, nor forests of hardwood.

But all our wealth comes from thee:
All the funds of our banks,
All the strength of the Government,
All the force of our national progress,
All the muscle of our people,
The beauty of our women,
The hard sinews of the workers,
The strong brain of the banker,
The level head of the statesman,
The shrewdness of the diplomat,
The right arm of the Throne.
(There must always be good blood there.)

We work in the fields:
In the rice,
In the millet,
In the corn,
In the poppy. (The poppy is evil.)
We work in the vegetables,
In the grain,
And all that is good for man.
But 'tis not for their sake alone,
'Tis that by bringing them to fruition we raise
A Nation,
A People,
The Middle Kingdom!
And when we do this
We are pleasing the Ancestors.
Shen Nung,
You did not teach us mean arts,
You did not show us the way to cheat our friends,
Our brothers,
Our townsmen,
Our officials,
Even our enemies.
You did not tell us that we should live by sloth,
Nor smart games,
Nor subterfuge.
Therefore,

The fact that great men in all nations have wrought our wonderful conceptions of man and his place in the universe, links together the whole human race in a brotherhood totally inexplicable to the agnostic. The revelations given in a recent translation of the life of that great Chinese statesman, Li Hung Chang, will come to most of us as a pleasing confirmation of our estimate of the big men of even heathen peoples.

This Shen Hung tribute glorifies the God that Provides, peculiarly and aptly termed the Guardian Deity of that oldest form of industry —Agriculture. How well this poem grips the whole business of farming and its associated and dependent industries, will be revealed to the reader by a careful re-reading of it, —"The message of ages and ages of sweet thinking."

Li Hung Chang was a statesman who will rank among the world's greatest. His hatred of the English for introducing the detestable opium traffic into China may be revealed, perhaps, in the neat reference in the poem. Many Canadians will remember the aged statesman when he travelled through Canada. These remember the odd sight of policemen carrying his Palanquin through the Exhibition crowds at Toronto.—Editor.

This day, when I am called to go to the North,
When vast affairs of state speak to me,
When some might think that I should be preparing for my journey
I am here saying these things
To Shen Nung.
Even when I was a little boy,
When my father labored,
When my mother scolded,
When there were mean times in the village,
And I was almost tired of living;
I thought of thee, Shen Nung—
And the green grain thou gavest,
The yellow corn so rich in bread,
The nodding wheat that gives color to the blood,
The vegetables that give strength to the bone.

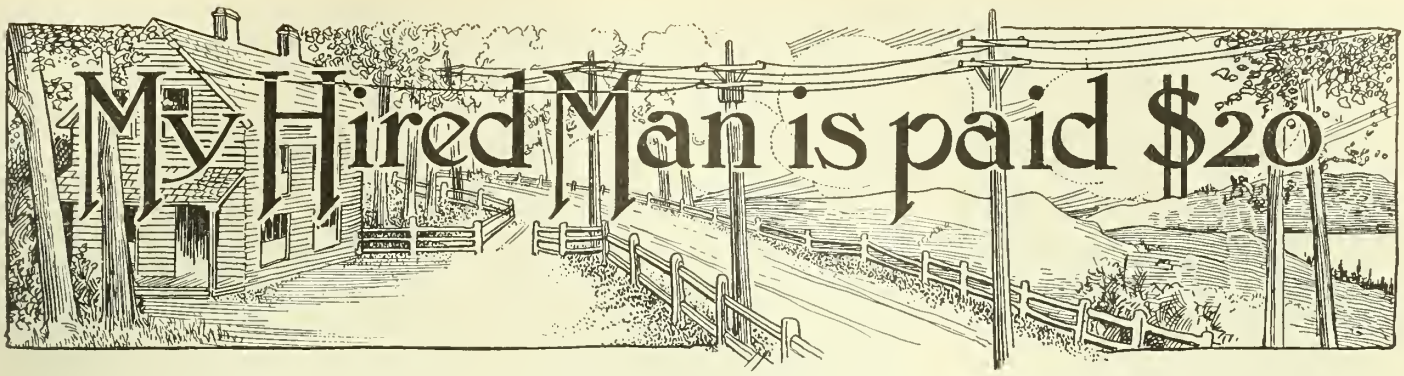
You taught us all these things,
You made them ours,
You made them beautiful, and gave them to us.
You made our land be fertile, the soil in which they grew.
Because you smiled, the winds blew fair,
The sweet rain came like drops of glory,
The sunshine did not hurt,
The moon told the crops to keep growing,
The stars blessed each head of grain,
The dews dropped their blessings
On the corn and the vegetables,
And made them glad,
For the people's sake.
You taught the golden sun to shine,
The night to be cool and refreshing,
The air to be sweet and to soothe,
The trees to hold back the storm,
The grain to bow their heads to meet the blast.

I see in your art,
Shen Nung,
The message of ages,
And ages of sweet thinking.

I see thy blessings conceived,
Increased and multiplied.
I feel the countless hours of thought you have given
To make something
So grand and glorious for the world.

You did not sleep,
You did not rest,
You did not tire,
You did not stop,
Until all this
Was ready to be placed upon the head of man
For his everlasting blessing.

As though thou hadst spun
The finest silk
And hung it there
A rainbow!



The Wonderful Workings of Electric Power on an Ontario Farm

By W. L. SMITH

While many progressive farmers have a vision of the time when dreams come true, and their houses and barns will be lighted and fully equipped with electrical labor-savers, it is still rather unusual to find a concrete case such as we have described here by Mr. Smith. In installing a system like this on his own farm the writer completely overcomes the arguments of the skeptic who does not believe in the economy, efficiency and safety of electric service, and impresses us with the truth that if no one ever dared to break the rule of doing as his father did we would still be living in caves and trading flint knives for juicy roots. There are now in Ontario alone, six power systems ready to light farm buildings and country roads, and operate almost any implement of labor from a washer to a threshing machine. One of the greatest difficulties is that we think we are not ready for it. The cost figures for the current in this case are slightly cheaper because the farm is near a village and secures the village rate.—Editor.

THE FIRST message sent over the first Atlantic Cable was a message from the late Queen Victoria to the then President of United States, which carried these words, "What wonders God hath wrought."

A better selection for the first message flashed beneath the Atlantic could not have been made. The reason for the expression used will become more apparent when we think back to the circumstances under which it was used. Immediately before the completion of the cable communication between the old world of Europe and the new world in America was by slow going steamers which spent a fortnight on the journey. A few years before that the men and women who really laid the foundation of the Ontario of to-day spent anywhere from one month to three months crossing the ocean. For an average of six weeks they were lost to the world while on the way. Another six weeks passed before the friends left behind could hear of their arrival. A third six went by ere acknowledgement of the first letter to the old home was received in the new. A continuance of such conditions would have meant, in time, the permanent severance of all real relationship between the new land and the old home beyond the sea.

The laying of the first cable, with the possibility of instant and constant touch between the two, caused the permanent linking of the two worlds together. Columbus discovered the new world. The cable united the new and the old worlds in a common bond. The laying of that cable was an event of even greater moment than the discoverey made by Columbus. It not only joined two worlds together; it marked the beginning of that wonderful series of inventions which have transformed old and the new worlds alike.

The Blessings of Waterfalls

But of all the discoveries and developments since the first Atlantic cable was laid, to me at least, the greatest of these is that by which our great water powers, scattered all over the face of North America, which for countless ages had been pouring forth their unused wealth, have been harnessed and their mighty forces made to brighten life, lighten labor and add in innumerable ways to the comforts and conveniences of living.

Take the particular power in which we are most interested, that centered at Campbellford, for the purposes of illustration. When the Algonquin mother rocked her babe beneath the over hanging forest that mighty torrent was tumbling and tossing with fierce energy on its way to the bosom of the lake. When the Jesuits carried the cross to Indian wigwams by stream and lake, it was still there and still useless. When Wolfe and Montcalm went to their death on the Plains of Abraham its power to bless was still unthought of. When our fathers and grandfathers were hewing out homes amid the gloom of the bush it ran its course without its great secret having been discovered.

To-day a net work of wires extending from those falls carry a power, silent and invisible, over mile upon mile and, by the simple turning of a switch in a score of villages and towns, the darkness of night is banished. In hundreds of work shops the giant starts machinery in operation by which articles without number are prepared for our use and comfort without the sweat and toil of hard labor or the grime and smoke inseparable from the steam engine which was the marvel of a previous generation.

Farm Homes Made Comfortable

In these later days farmers have begun to share directly in the conveniences and comforts, in the use of the labor-saving devices, that for a time were confined to urban centres. Farm homes and out-buildings are being lighted; water in the home is being kept under pressure in a way that makes it possible, by a mere turning of a tap, to secure hot or cold water at will. In the house, toil is being lightened by a servant which never tires and which, by the pressing of a button, will run the washing machine and wringer; operate the sewing machine; drive the separator; work the churn; and, if you so will, make the toast, boil the eggs and prepare the coffee while breakfast is in progress.

In the barns and stables this same untiring servant is running the cutting box; milking the cows; pumping the water; filling the silo; doing the threshing, and withal supplying light wherever and whenever needed.

What it is doing in my own case may interest many. Where I live a branch of the Seymour Power Company's line passes the door. There is a small transformer on the pole opposite the house. This reduces the power carried by the wires to suit my needs. House, barn, stables and driving shed are all wired. There are three switches in the hall; one turns on the hall light; a second the dining room and a third the parlor. At the head of the stairs another switch turns on a light in the upper hall; other switches turn on lights in the two bed

rooms on either side. At the foot of the back stairway, leading from the kitchen to the hall at the back part of the house, is another switch. By turning this, before the kitchen is left, the stairway itself and the back hall above are lighted, There are other lights in the two back bedrooms and in the bath room, which are all entered from the hall. There are lights, as well in the summer kitchen and wood shed and in all cases the switches are so arranged that light can be thrown ahead of one in going to any part of the house.

A Pressure Tank for Water

Directly behind the kitchen is a cistern of 2,500 gallons capacity. A pipe runs from that up into the pantry off the kitchen. This pipe is connected with a pump and tank, operated by an electric motor of one-sixth horse power. The tank is an air-pressure one, that is, the pump not only forces water into the tank, but air as well, and the pressure in the air keeps the water in the tank also under pressure. When the pressure goes down to between fifteen and twenty pounds, the pump starts automatically, when the pressure gets up around sixty pounds the engine is shut off automatically. The tank is connected with a hot water front in the kitchen stove, and when the stove is going we have hot and cold water always on tap in the pantry and in the bath room above. The pressure is quite as good as that which we had in Toronto.

We are this week installing another convenience, an electric washer. A sixth horse-power motor will operate both washing machine and wringer. All the labor of washing, aside from hanging out the clothes, will then be performed by electrical energy.

In addition to this we have an electric iron, and an electric heater. This will boil eggs, make coffee or toast bread. The iron uses very little current. It does away with running to and fro to a hot stove. By its use the time spent in ironing is cut nearly in half.

Electric Lights in the Barn

In the barn we have a switch at the entrance to the stable with lights in the pig pen, water shed, over the cow stalls, behind the horses and in the root cellar. Another switch turns on a light in the barn before one goes upstairs to the barn floor. At the entrance to the driving shed is a switch by which a light can be turned on there as soon as the door is opened.

Cost of Conveniences

Pump and motor.....	$145.00
Wiring the house	37.18
Wiring the barn, etc.....	24.27
Electric Iron and Heater...	7.00
Washing outfit with motor.	60.00
	$273.45

Cost of Operation

In the first 14 months of operation we paid $19.56 for current used. During the whole of that time we have had the pump and lights in the house. During ten months of the period we have had the lights in the outbuildings as well. Our heaviest account for any one month was $2.16. Our lowest, for a full month, 64 cents. The washing machine has not yet been used. When the whole thing is in operation—lighting house, pumping, washing, separating and churning—the total annual outlay will be about $20.00.

A first cost of $273.00 and an annual charge of $20 may appear a good deal. But look at the convenience, the safety, and the labor saved. When we first began housekeeping we had oil lamps. In the barn, since then, I have been in constant fear of a smashed lantern and a burning building. There is first, then, the element of safety. There is again the element of convenience. A lamp gives more light about your feet than you need. By turning a switch you have the light ahead of you lighting your way in advance. There is, too, the saving of time. There is no cleaning and filling of lamps where you have electric current. With the same agent used in washing, separating and churning the hardest labor in the house is gotten rid of. But the greatest boon of all is the pump and hot water attachment, which gives you hot and cold water at will, with the inestimable comfort of a bath, already prepared, after a hot and dusty day in the field.

There are other things that electric power mill do, which I will not more than mention, because I have not yet applied the power in this way. Among these are the pumping of water in the stable, running the cutting box, pulping, filling the silo, and threshing the grain. All these things can be provided for, even to the threshing and filling the silo, where a number of farmers group together and use their combined current in that way. All the other things can be had by the use of one's own power, but of course, the cost will be greater than is involved in the use of services, which have already been installed in my own case. But if we allow 10 per cent. for depreciation and repairs, 6 per cent. for interest on investment, the annual charges will not total $75 a year and what farmer would do the work for this money? or who would forego the privileges for this paltry sum?

The securing of electrical energy on the farm means more, in the way of convenience, of safety, of comfort, and of good living generally, than any other one thing, not even excepting the telephone and rural mail delivery.

Messages from Mars

MARS is a planet over 35 million miles from the earth. M. Coultre, a distinguished Geneva astronomer, has arrived at the conclusion that it is trying to communicate with us.

During a close watch he kept upon it for seventeen days, he several times noticed bluish-white blurs on the surface of the planet, like the glare of powerful electric arc lamps. The illuminations usually lasted several seconds and took place several nights running. Many astronomers are of opinion that Mars is highly civilized—thousands of years in advance of the Earth. When seen through a powerful telescope its surface appears to be covered with a criss-cross of straight lines. From the fact that these lines swell in spring and fade away towards winter, just as the snow-caps which represent Mar's arctic and antarctic regions get smaller and bigger, it is thought probable that the lines are huge canals, constructed to irrigate the planet. The swelling of the lines is supposed to show the growing of great belts of vegetation along the canal sides as the thawing of a snow-cap fills the canals.

It has often been suggested that the earth might try to have a chat with Mars by flashing specially constructed searchlights in her direction. If the Morse code were used and long enough messages were sent, the Martians would, if their brains were equal to the human brain, soon piece out a meaning—if they had telescopes as strong as ours. But it is quite possible that their brains and their telescopes are both infinitely more powerful. A Paris astronomer declared recently that he quite believed Mars knew all our cities and towns, and could even watch our steamers crossing the Atlantic.

In An Old Garden

'Twas the season's last rose, and some late mignonette
Shyly proffered to me by the Rose of all Roses;
The day was capricious, now sunny, now wet;
The venue, the dearest of old garden closes.

We had met, we had loved, we had quarrelled. Ah me!
The blame—was it mine, was it hers? Who shall say?
But the color had fled from the sky and the sea
And the light had died out from the face of the day.

Rose flashed me a look as she offered the rose,
There surely was witchery lurking within it.
The dim-lit, delicious, old yew-shaded close
Seemed to burgeon and blossom to beauty that minute.

Still loyally treasured, though faded and sere
That late-flowering rose and that sweet mignonette;
The gladness they brought us grows deeper each year,
The fragrance, the charm, they abide with us yet. —*The World.*

The Tap Root of The Nation

Canada as a Source of Supply for Dairy Products

By PROF. H. H. DEAN

The decrease in dairy exports during recent years has led many people to think that the dairy industry in Canada is on the decline, and farmers have been blamed in some quarters for their lack of enterprise. Our estimation of the situation is often wrong because we fail to realize the quantity it takes to provide an increased population of say two and a half million people with milk and milk products. In one way or other Canadians are consuming between thirty and forty million dollars' worth a year more of dairy products than they did ten years ago, and in this sketch, which is the introduction to a series of articles that Prof. Dean is preparing for us, we are clearly shown that the future points to still better things. If the dairy industry is the tap-root, or the branch of agriculture which holds the nation in place, Canada with her fine geographical conditions and natural adaptability offers an excellent opportunity to the dairyman. This, and the succeeding articles from the pen of an authority like Prof. Dean will make most interesting and profitable reading for every farmer.—Editor.

WHILE IT is true that dairying can be conducted in nearly all climates, and the principles of dairying are practically the same, the world over, certain climatic conditions are more favorable than others for the development of dairying to its highest degree of perfection. The best dairy countries of the world are the British Isles, Denmark, Holland, Northern France and Germany, Southern parts of Norway and Sweden, Switzerland, Northern Italy, parts of Russia, the Northern United States, New Zealand and parts of Australia. Looking at these countries climatographically, we find that they have this in common, a moist, cool atmosphere, where grass grows well naturally. In most cases these dairy countries are partly or entirely surrounded by salt or fresh water. They are also well supplied with fresh water for the cattle to drink.

If we look at Canada we find that here is found practically every climatic condition to be seen in the best dairy countries of Europe, except that for salt water we have, for the Eastern Inland Provinces, great seas of fresh water lakes. The Maritime Provinces in the East, and British Columbia in the West, have all the essentials of any European Dairy Country. The Western Inland Provinces can grow alfalfa, oats, flax, and wheat to perfection. Alfalfa hay, ground or chopped oats, flax seed in pure form or as a by-product, and the by-product bran from wheat, is one of the best feed combinations possible for winter dairying. May we not anticipate a condition whereby the wheat of our North-west will be exported in the form of flour, and by-products fed to live-stock in Canada to produce milk, bacon, beef, and poultry? Instead of elevators from the Rocky Mountains to Fort William, why not flour mills for grinding the wheat, then the rich bran and middlings and feeding flour, may be used by Canadian farmers to improve the live-stock and maintain soil fertility, which after all is the basis of a sound agriculture in every country? We cannot continue to mine our farms without disastrous results, hence the great need for conservation of our natural resources.

Having shown the great natural advantages for dairying in Canada, we may well ask why should there be in the Province of Ontario.

The last Report of the Bureau of Industries for Ontario which the writer has, is for the year 1911, in which it is estimated there were that year in Ontario, 1,045,610 milch cows. In 1907 the estimated number was 1,152,071 milch cows. Why this decrease of over 100,000 cows, in the four years? Without going into details the chief reason for the decreasing of the herds of milk cows in Ontario, is the fact that the increase in returns for milk and milk products has not kept pace with the increased cost of milk production, chiefly in labor and purchased feeds, although increased land values has also been a factor. According to the foregoing report we have in the Province of Ontario 2½ million cattle of all kinds and 700,000 horses in round numbers. The acres of cleared land are approximately 14½ millions. In other words we are taking over four acres of cleared land, to say nothing of the over 10 million acres of woodland, slash, swamp, marsh and waste land, which is used to a greater or less extent for pasture and hay, to maintain one animal. The best dairy countries of Europe are able to maintain in certain sections, one cow per acre, which is the standard we have for a number of years set up for the dairy districts of the Province of Ontario.

One of the good cows of Tregillus' big herd, near Calgary.

Is One Cow Per Acre Possible ?

Down in the Province of Quebec lives a dairyman who has practically reached the standard of one animal per acre. On his farm of 140 acres he keeps 150 head of cattle and horses, milking in winter from 60 to 70 cows, and buying no roughage. In the banner Province of Canada we are keeping less than ten milk cows per 100 acres of cleared land. This Quebec Dairyman ascribes his results to the growth of corn for making silage, having nearly one-fourth of his farm in this crop; the growing of clover and roots; and following a four-year (he says, better still, a three-year) rotation of crops.

Will the Ontario farmers go into dairying more largely? The writer thinks they will, **if the price of dairy goods is made sufficiently attractive.** Will the Western farmer forsake his wheat idol and worship cows? Yes, if the remuneration warrants the change. Those in a position to know, say this change from grain-growing to mixed farming is bound to come in the Western Provinces of Canada, as it has already done in Wisconsin, Minnesota, Iowa and the Dakotas, which at one time were almost exclusively grain raising States.

In Ontario we are keeping less than half a cow per head of population. There is no reason at all, except lack of profit, why our farmers should not keep at least one milk cow, for every man, woman, and child in the Province. When this standard is reached, it may be reached, it may be raised to one cow per acre of cleared land, which would mean more than ten times the number of cows kept at present, but this will not come about until our dairy farmers are assured of higher and steadier prices than is the case at present, or rather has been in the past, because with the passage of the Underwood Tariff Bill in the United States,, wider, steadier, and more remunerative markets

are assured our Canadian dairy farmers.

Since the passage of the new tariff by the Americans we have received an enquiry from a New York firm wishing to know where they can purchase the output of two large creameries in Ontario to be shipped to New York in the form of milk, cream or butter as may be required. They say they will pay highest New York prices for the goods and would like the option of buying the Creameries at the end of one year. There is no reason why Ontario should not supply the fancy trade in dairy products, not only in New York and Buffalo, but also in other large American cities of the New England States. With all due respect for the American farmer, the Canadian farmer is, we believe, a better and more painstaking producer of milk and cream, **if he is paid for his services at the same rate as is the American farmer.**

To show the difference in prices paid the two, let us compare Borden prices in Canada and New York, per 100 lbs. milk:

Month.	Canada Prices.	New York Prices.
October, 1913	$1.50	$2.00
Nov. and Dec.	1.60	2.10
January, 1914	1.60	2.05
February, 1914	1.60	1.95
March, 1914	1.50	1.90

The average Borden price for Canadian milk, for six winter months is, $1.57; the average New York Borden price is $2.01 per 100 lbs. From Windsor to Cornwall preparations are being made to ship milk to the American markets, and we may expect the price to advance in Canada to a point equal to the American price, less cost of haulage.

Not only may we expect milk and cream to be shipped across the border, but also cheese and butter. A London, England, weekly market report says in a recent issue: "The Underwood Tariff came into operation in the United States on the 4th of October, three hours after President Wilson had signed the document. The price of best butter in New York the day previous was 32c per lb. (149s|4 per cwt.), while in Montreal it was 27¾c per lb. (129s|6 per cwt.) Finest Cheddar cheese in New York was 16¾c. per lb. (78|2 per cwt.), while in Montreal it was 13½c per lb. (63s|- per cwt.) It will be interesting to note in say three months time what the difference will be in these two markets."

"The Tariff reduces the duty on Butter and Cheddar Cheese to 2½c. (1¼d. per lb., or 11s|8 per cwt.) from the 6c per lb. charged under the Payne Tariff. (The correct tariff on cheese is 20 per cent.) The effects of these reductions will be watched with intense interest by the Dairy Trade in this country and in the British Dominions."

All the signs point to advanced prices and more uniform prices in the future for Canadian dairy products. The Canadian milk producer will likely receive more nearly what is his just due than has been the case in the past, and he will be encouraged to keep more cows, feed them better, and take better care of the milk and cream, because it will **pay him to do so.**

Will prices be advanced to consumers of dairy products in Canada? We think not to any great extent, for the reason that prices to the consumer in Canada are near the limit beyond which they cannot be forced very much, without turning attention to cheaper substitutes. They also, are nearly on a level with the prices charged American consumers. Who then are likely to suffer by the advanced price paid the Milk Producer? Those who stand between the Producer and Consumer, exacting a toll, in many cases beyond the value of services rendered. In the competition for the dairy goods, which is bound to result from wider markets, Canadian Producers will gain, and Consumers will not likely suffer to any extent, except in times of scarcity. With modern methods of treating milk, by Condensing, or Homogenizing, there is no reason why a fairly uniform supply of milk in some form, should not be available throughout the whole year at reasonable prices.

The outlook is satisfactory for a larger production of milk in Canada and the price is likely to be such that it will pay Canadian farmers to grow more feed, to feed more cows, to produce more milk, to make more money, to grow more feed, to produce more milk. Thus the endless chain is started in motion, which will increase the prosperity of our farmers, which means improvement for all classes in Canada.

According to Chinese philosophy, a Nation is like a tree—Agriculture is its roots, Manufacture and Commerce its leaves and branches; cut the root and the tree withers and dies. Dairying is not the whole root system of the tree, but it is the main, or "tap root," which keeps the tree in position, as well as being a very important part of the "root system" which feeds or supports the tree or nation.

Statesmen act unwisely when they hamper the farmer, as is too often done. We are admonished, not to muzzle the ox which treadeth out the corn. Farmers are of a meek and forgiving nature, else they had long since rebelled against the muzzling process adopted by some persons in authority.

But such need to remember what Meredith said:

"Forgetful is green earth; the Gods alone
Remember everlastingly; they strike
Remorselessly and ever like for like.
By their great memories the Gods are known."

Eliminating the middleman in the dairy industry.

Smaller Fleas to Bite 'Em

CHINCH-BUGS, the wheat destroyers, were until recently such common pests that entomologists have been deeply interested in methods to rid the earth of the scourge and to learn more of its proper place in nature, says a writer in *The Independent.*

One of these students is Prof. James W. McColloch, of the Kansas State Agricultural College and Experiment Station. He has discovered the microbe that destroys, like the ten plagues, most of the pest's eggs.

Every day Dr. McColloch searched for a fresh hatch of chinch-bug eggs from various neighborhoods and studied them carefully. In the course of this investigation, he observed that certain of the eggs assumed a dark color instead of the normal red tint. When he separated these bad eggs from the others, he saw tiny parasites emerge from them to produce a fatal malady in the family.

Mr. A. B. Graham, the entomological expert of the United States Department of Agriculture, says this parasite is "entirely new and establishes itself as a special genius of its own." There seems no doubt that this discovery spells the doom of all chinch-bugs, because this parasitic microbe planted or scattered anywhere near the wheat-eater will annihilate it utterly.

TO-DAY

By DOUGLAS MALLOCH

Sure this world is full of trouble—
  I ain't said it ain't
Lord! I've had enough, and double,
  Reason fer complaint.
Rain an' storm have come to fret me,
  Skies were often gray;
Thorns an' brambles have beset me
  On the road—but, say,
Ain't it fine to-day!

What's the use of always weepin';
  Makin' trouble last?
What's the use of always keepin'
  Thinkin' of the past?
Each must have his tribulation,
  Water with his wine,
Life it ain't no celebration.
  Trouble? I've had mine—
But to-day is fine.

It's to-day thet I am livin'
  Not a month ago,
Havin', losin', takin', givin',
  As time wills it so.
Yesterday a cloud of sorrow
  Fell across the way:
It may rain again to-morrow,
  It may rain—but, say,
Ain't it fine to-day!

Getting Man Back to Eden

Impressions From the Woman's Institute Convention

By GENEVIEVE

The recent Ontario Women's Institute Convention marks an era in the work of an organization generally recognized as the most flourishing, and one of the most efficient forces working for rural progress. The movement is no longer confined to this one Province and the feeling pervading the Dominion was expressed appropriately in the greetings from many of the sister Provinces received during the sessions. This article touches the high places in the proceedings at the convention, to give in some measure an idea of what the Women's Institutes are doing.—Editor.

ONE OF the impressive features of the recent Ontario Women's Institute Convention was a spirit pervading the entire programme, which showed clearly that the line generally supposed to divide the woman of the town from those of the country is purely an imaginary one. During the last few years no person has been more talked of and written about by well-meaning sociologists, than the "farm woman." Suggestions for brightening her life, broadening her horizon and effecting the general uplift of her condition have been handed out bounteously from a thousand sources, but now she is going right to the roots of things herself, and a great many conditions which for generations have hampered rural progress are receiving a mighty upheaval.

We still agree that the woman on the farm has a pretty big job, big in significance as well as in its demands, but she is no longer to be considered an object of pity.

The warp thread running through the entire programme was the welfare of children. Just how firm a hold this has on the mothers of Ontario is shown by cases like that of one mother who left eleven children at home, brought the baby with her and came all the way from Muskoka to report for her society and preside at one of the sessions. And the interest is not due to any sentimental enthusiasm,—of course there is sentiment strong and deep-rooted at the bottom of it as there is in every great movement—but when men in addressing the members spoke eloquently and poetically of "the hand that rocks the cradle," they were told that the practice was no longer approved; it was not in accordance with the latest scientific principles.

Some of the most practical Institute work for children has been done in connection with the schools. How amazed we would have been a few years ago to hear of a band of women presenting the Minister of Education with a petition signed by representatives from almost every neighborhood in the province, asking for medical inspection in rural schools. How much greater would have been our wonder to see a well equipped school clinic established and a school nurse engaged for the district,—projects which have been carried out in "North Middlesex, and which are likely to be undertaken by other Institute districts. We do not hear much about "What is my child studying at school?", evidently the mothers feel that the Education Department is looking after that very well, but the question was driven home insistently "What is he playing?" Mothers are no longer totally ignorant of the dangers to which the children in the average rural school are liable during the play-hours, and they are thoroughly alive to the need of supervised play, good playgrounds, and playground equipment. Think what it means to have some capable responsible person in charge of the children during noon hour if the teacher must be away, and what it means, if you live in a town to have a supervised playground open for the children during the holidays. These, together with organizing School fairs, and improving the buildings and equipment are among the favorite enterprises of the Women's Institute. What the Mothers' Study class of Belleville have discovered for themselves has taught them the importance of having a Children's Bureau in the Department of Agriculture. This resolution was also presented to the Department. In the estimation of these women the dissemination of knowledge teaching how to give boys and girls the best chance in life is as important as having a bureau whose business shall be mainly the breeding of a super class of live stock.

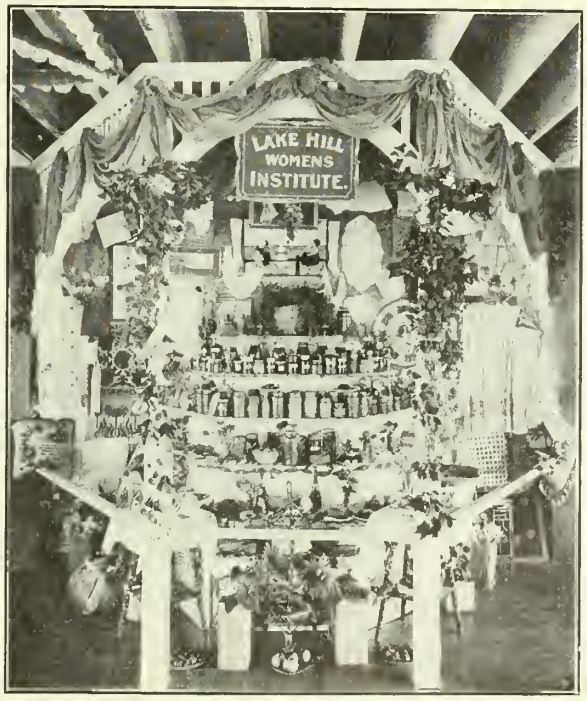


Exhibit of the Lake Hill Women's Institute at the fall fair at Victoria, B.C.

Another line of work which the Ontario institutes are taking up with considerable enthusiasm is the Demonstration Lecture Courses in domestic science, sewing and home nursing. The members do not feel that the time they have given to "cooking" in the exchange of recipes and an occasional demonstration at the monthly meetings is enough. They want to study the science of cooking just as men study the science of farming. It may be a very old and very practical subject but the institute woman realizes that it has an ethical value as well, that after all happiness is, to a considerable extent, a matter of digestion.

Reports of farm industries for women, —fruit-growing, poultry-raising, and bee-keeping were received with an interest which told forcibly that the girls of Ontario are taking a new pride in the work of their hands (we might say hearts and heads too, because you have to have these in any work of agriculture) and that they are gaining a fine independence in earning money for themselves, without leaving the home and community that need them so much.

Community improvements are still being carried on with excellent results. Parks, cemeteries, drinking fountains, halls for public meetings, seem to be everywhere mothered by the Women's Institute, but a greater good is being accomplished in brightening up and cleaning up the community social life for the young people. The mothers are no longer satisfied to merely say to the boys and girls "You must not do this and that." They provide something better for them to do.

There were other impressions to bring home for the Women's Institute Convention, impressions which show that the women of Ontario are just finding themselves and are going to move things. Next year we might almost expect a petition for equal suffrage and that of course with the best interests of the entire population in view. The Institute women do not consider their responsibilities lightly. In

speaking of this Miss Guest said "At a suffragette meeting a speaker demanded "Where would man be today if it were not for woman?" And a musical masculine voice from the back of the hall drawled "In the garden of Eden." "Now," she said, "if we are responsible for their expulsion it is clearly our duty to try to get them back."

Geo. A. Putnam, Superintendent of the Ontario Institutes.

After all, this is just what all these movements are tending to.

Verily the Women's Institute has a proposition before it worthy of all its enthusiasm.

The Iron Age

Prize Poem in O.A.C. Competition

By JUSTUS MILLER

Oh, were we all savage with never a law,
What primitive sights we might see;
Or were we all saintly with never a flaw
How wonderfully happy we'd be.
But this is the curse of the devil's smart,
Since the deed by the Eden tree—
That a primitive part in each man's heart.
Should always savage be.

For every man's heart is a stricken field,
Where good and bad disagree;
The sabre of truth he may hardly wield,
Because the devil is free.
And never a man won the saintly name,
But his devil grinned in glee;
He knew of the shame, of the ghastly game,
That others might never see.

The fierce wild blood of a primitive race,
That flowed ere the dawn began;
Makes a sorry mask of a Whiteman's face,
To cover a savage man.
Because we are White, we must follow the quest—
We must struggle forever again;
But the savage breast will never have rest,
Though the Blood on Calvary ran.

'Tis a sorry sight as the years sweep by,
And Gospel and Grace are free,
To see in the depths of a Goodman's eye,
A wild man's savagery.

In a soul where silent vices are rife,
Nor the devil and saint agree—
O! the soul-sick strife of a Whiteman's life,
Damned to this slavery!

The sulphurous hell that the downfall sent
Is not one half so dread,
As the ghastly grave of our good intent,
The hell of our living dead;
The generous thought, the courageous fear,
The God of heart and head,
The good that our devil, in anguish drear,
Has placed with the slaughtered dead.

But we must work in this maze of life,
For the ones who are to be;
Though ever the savage through all the strife,
Will continue in you and me.
We must work as we can—it may all be well—
As we have since time began.—
But O! I am sad for this thin white shell,
That covers a savage man.

This poem won the first prize in the Review Competition at the Ontario Agricultural College and is now first published. The author is already well-known to Farmer's Magazine as a contributor. The theme calls to mind a saying of an American writer—that a scratch of the skin to the average American reveals the savage. That there is considerable merit in this poem, will be conceded by most of our readers.—Editor.

Physical Health as Part of Your Capital

A VERY large part of the capital that you are putting into the home-building is your physical health. I do not know any place where a woman is more ignorant, less well-balanced than in this very thing. This ignorance, and the great necessity for most wives and mothers to appear always on duty, has been the source of more evils than the rest of the world has any idea of, says a writer in *The Woman'sMagazine*.

Not every—in fact, I might say not many—women enter marriage with the physical health to cope with its ever-present, often crushing duties, but they get along somehow. It is because you do get along somehow, and miserably at that, that I want to offer to you a few suggestions for getting along better. Whether you have robust health, or merely poor health but plenty of will-power to back it, you can keep what you have and even improve upon it by a few helpful, simple laws that guarantee it to you if followed intelligently.

No woman, whether as an individual, or wife, or mother, would willingly be wantonly wasteful of anything, least of all if such waste were going to work disaster to herself and those whom she loved; yet the majority, economical in matters of apparent importance to themselves, are spendthrifts of the most pronounced type in one particular instance. I refer to the lavish waste of nerve-strength, and in no form does it make itself more apparent than in that of fatigue.

Fatigue is the most subtle destroyer of youth, of poise, of justice, of dignity and love, in existence, and any woman who desires to see herself an uninteresting, wrinkled, prematurely-old person has but to court it to meet with success. Fatigue is a bad combination of the sins of commission and omission, or, in other words, it is merely a name for disorganised force—force scattered and never brought under the control of reason, to be sent out thence into purposeful effort.

The terrible grip with which womankind grasps everything that comes into its life is one of the most pathetic aspects of its existence . Is it from fear that this thing that ou love may slip away from you, or fear that you may not be conscientious enough in the performance of your duties? Let me assure you of this truth. There is such a thing as an overpaid duty. Do not forget this fact. Keep it before your mind with each task that comes to your hands, and refuse to be overcharged. You will be a better wife and mother, and a happier woman, when you have so far acquired the habit of calculation that you know to an atom the amount of strength you possess and can lawfully dispense throughout your own life and that of others. Train your conscience to receive the impression of each demand upon you as an imprint rather than an impact. There is little fear that you will neglect anything—anything but yourself; a great deal better for both you and your family if you could occasionally be found guilty of this charge.

The Romance of Marketing

The Rejuvenation of a Tired-out Trade

By ALEX. MacPHERSON

Owing to the recent movement on the part of the Department of Agriculture to improve marketing conditions throughout the province of Ontario, and to the growing conviction that a more direct line of trade between the producer and consumer is the only immediate means of relieving the high cost of living, the local public market trade is getting new vitality. In this article the writer brings to light some of the interesting features of the business so commonly overlooked.—Editor.

THERE WAS a time when I couldn't see the romance in marketing. A long drive in the weird hours of a winter morning with a heavily loaded waggon and a lantern burning under the robe between your feet is, to make the best of it, commonplace. Then, not infrequently I have stood for hours on the market doing nothing, because I had no regular customers and hadn't taken forethought enough to put into the load anything except the staples; there was nothing novel or particularly attractive about the waggon to catch the attention of the casual passer-by who might be turned into a good purchaser. Worst of all, when I had sold out I stood facing the more formidable problem of delivering. Before a man undertakes to deliver a load of goods he should make a thorough study of the map of the city or he will do miles of unnecessary travelling, and even then, delivering is the bug-bear of marketing. In Montreal, I believe, they have a system which simplifies this considerably. Suppose a woman in the city has her regular butcher who delivers meat at her house every day. She goes to the market, buys what she wants, tells the farmer to leave the goods at the meat-shop, and the meat-man, to be accommodating and hold his custom is willing to take her parcels along when he makes his regular trip. While it would be difficult to get a system like this working in most of our Canadian cities, it suggests that if a number of farmers would get together and encourage a man in town to work up a delivery business from the market to the homes of customers, they would find that it paid them many times the fee charged. The heavy team and waggon necessary to take a big load to market are no more suited for huckstering goods around the city than the average farmer is himself.

While we are speaking of this I might also say that I have found it doesn't pay a man with a large farm and hired help to have a team on the road one or two days every week, and all day at that, so last year I bought a motor-truck. Now there is no danger of over-loading, no horses to care for in town, in the busy season I can get home, a distance of eighteen miles in time to do half a day's harvesting, and when my wife wants to go along to do a day's shopping the trip is a real pleasure excursion instead of the old stage-coach ordeal it used to be. I believe now, that a good deal of the romance of marketing comes from having a motor-truck.

Then there is the question of what to take to market. The man who puts marketing in its proper place in his business will take into consideration the time and season of the public demand for certain goods, when he plants his vegetables, sets his hens or the incubator, or chooses an early or late variety of strawberries. He knows that the farmer who has an early supply of string beans, new potatoes, green peas, young beets, or carrots, can compete fairly well with the suburban hot-bed gardener, because the latter has already had his best sales while the demand for more goods is still urgent. He knows that no early spring market has ever yet been flooded with tender young asparagus, so he gets a good sized bed ready in the fall and gives it as much attention as he can as soon as the shoots appear in the spring. He knows that broilers weighing from twelve ounces to one pound may sell in June for sixty cents, and that new-laid eggs in November have been known to bring seventy-five cents.

Where the market is in a city or a town with a considerable Jewish population, there is always a demand for live fowl, especially chickens for Saturday and also for the holidays. The chickens need to be ready for the Thursday or Friday market and the farmer must be informed as to the dates of the special feast days as well. This year they occur as follows: March 12th, April 11th to 18th, May 31st and June 1st, September 20th, 21st and 30th; October 5th, lasting three or four days, and December 13th. For three weeks following the Jewish New Year, Sept. 21st, the demand for live fowl is greater than at any other time of the year, particularly from Sept. 25th to the end of the month, this being the time before the Day of Atonement, when every Jewish home buys as many chickens as there are members in the family.

Odd Lines for Fillers

Occasionally you may have to go to market to take a load of some one commodity—of maple syrup, or butter, or eggs, or poultry, or potatoes, or dressed hogs. Your load will not be much heavier if you add a few fillers, and there are sure to be some ready for marketing on every farm. Perhaps you may think they are not worth bothering with, and if you have regular customers for your goods or intend to sell them wholesale, the little odd lines have no particular purpose other than that what they bring generally amounts to more than you expect; but if you are going to stand on the market to sell to the general crowd of visitors you need variety to catch their attention. A few baskets of apples, or (now laugh at this) a flowering plant or a box of cut flowers will often work miracles; you will not be likely to sell them, of course, it will pay you to give them away, but you see their purpose. There are some of these odd lines, however, which have been found very profitable, but in a general way one could not guarantee a good sale; it all depends on your local market. For example, green onions on the market in November, or water-cress, even what the children gather along the spring creeks, will sometimes command a rush sale, and while a man might not care to bother with these things it is an encouraging business for a boy, particularly if he goes to market with you. Sauer-kraut is sold on some markets for a price that makes it decidedly worth while, and many women, particularly in the West, are doing quite a little trade with prepared horse-radish. In towns where there is no florist to compete with, the town women are glad to buy young house-plants from the farmers, while there seems to be a growing demand

Celery boxed ready for the market.

on the market for home dried herbs, thyme, sage and summer savoury. There is no limit to the variety of goods one might sell. In a Pennsylvania market-house I remember seeing a woman selling home-made house-dresses, aprons, and children's garments.

Besides getting the attention of purchasers by means of a novel display, everyone appreciates the value of attractiveness. Apples carefully packed in boxes, vegetables washed free of sand, but with the skin unbroken, well protected boxes of butter-prints with the name of the maker and the farm on each wrapper, will sell for more than the same quality of goods, poorly prepared for marketing. It is usually more satisfactory for both producer and purchaser where each farmer has his regular customers for butter and eggs, as it demands from the producer and assures for the customer a constant quality, at the same time doing away with the undesirable practice of uncovering butter for testing on the market. The dressed meats and poultry for the Christmas market decorated with holly sprigs will always sell a little in advance of the others. The aesthetic side of the market business allows broad scope for individual ideas and is one of the first of its romantic features.

There is no doubt that we need more markets. The world-wide rise in the cost of living has become a discouraging common-place. Volumes have been written to show causes and suggest remedies. Experiments unnumbered have been tried without apparent results, but there is one point on which experts inquiring into the causes for the high cost of living are agreed, which is that the situation could be greatly relieved by simplifying the distribution of food products and establishing such direct communication between producer and consumer that it would be possible for the farmer to sell his produce directly to the people who use it. The figures show that this enables the townspeople to buy fresh, clean farm produce from fifteen to twenty-five per cent. less than it cost, before the market was established; and both farmers and housewives argue that with the whole string of commission men, jobbers, wholesale and retail merchants and pedlars eliminated from the transaction of buying and selling farm produce, the necessary result would be that the farmer would get a good deal more for what he had to sell and at the same time the housewife would pay a good deal less.

Until recently the need of public retail markets has not been felt in Canada so keenly as in some of the larger centres of population in the United States. When the women of the Housewives League of New York took counsel as to what they might do to reduce the exorbitant price that was being paid for all kinds of food supplies, and decided that the only immediate solution was to have public retail markets, they sent a committee to present their views and their petitions to the authorities. The farmers joined in, and within a very short time, city officials and public spirited business men were interesting themselves in bringing about so simple and successful a reform. Markets seemed to spring up simultaneously everywhere. Oppressive marketing ordinances were revised because it was found that in many cases they had been drafted for the express purpose of keeping the farmer's waggon out of the city, and now instead of waiting on the long line of commission men, wholesale and retail dealers, pedlars, hucksters and push-cart men, the purchaser goes direct to the farmer's motor truck.

While this local support of the public market has accomplished a great deal, the recent movement working through the Department of Agriculture promises to give the trade more substantial backing in Ontario. The new branch of service organized to help the farmers in the solution of their local marketing problems will advertise the best methods and means of placing farm products before the public, the preparation of produce for the market, and the matter of transportation, freight and produce rates. Altogether the marketing business which for so long has been generally considered a hard and doubtful proposition, promises to become one of the most popular, and profitable, and to keep to our subject, one of the most romantic lines of farm work.

Making Money Out of Mink

Care and Breeding of the Animal in Captivity

By MORLEY J. EDWARDS

In our December number we published an article on the Money-Making Fur Animals, treating in general with the financial possibilities of the industry in Canada. In this issue the same author has given us a more detailed account of the ways and means of fitting up a mink farm, and rearing the animals for the rapidly growing trade. The enterprising farmer who likes to try things out or to keep in close touch with the latest agricultural developments, will find this intensely interesting reading.——Editor.

"WHAT? Fifty mink farms in Canada?" queried a man who prides himself on keeping informed in regard to matters of public interest, after reading the article on "Fur Farming" in the December issue of Farmers' "Fifty mink farms? I wouldn't have believed it."

Many others, probably, will accept the fact with more or less dubiousness. And there is good reason for this. This Fur-farming game—if the name be permitted—is such a comparatively new thing to most people in Canada that the idea strikes them rather curiously and they immediately begin to doubt.

The number fifty, too, is not intended to be exact but rather approximate. Last year a special investigator was sent out by the Conservative Commission at Ottawa to study the various fur farms in Canada, and even he, after spending the better part of a year over it, was unable to tell just how far the thing had spread. It has worked out something after the same fashion as happens when the small boy finds the hidden cookie box. He gets a good thing and knowing it doesn't blab it all over the house. He does his best to make the sinecure last.

It will perhaps be interesting to note before going further that since the article which appeared in December Farmer's was written the market prices on raw mink skins have dropped ten per cent. or more. A quotation of $8 to $13 on prime skins was made in that article. Since the reduction the prices run from $7 to $10 or $11, according to size and quality. The price for breeders—which would seem to offer by far the best present opportunity—remains constant at $35 to $40 per pair. Those who are in touch with the market predict a probable early reaction, though of course there is nothing certain about it.

One very promising feature about the breeding of mink, which, rather peculiarly, does not apply to foxes, is that, through the selection of sires it is possible to make a marked improvement in the stock. For instance, a male animal which makes a decidedly favorable impression by reason of color, size or other characteristics, may be used in mating instead of the comoner animals, and a noted improvement is almost certain to result. By reason of the fox's monogamous habits this feature cannot be taken advantage of with the latter animal. The science of eugenics, it will be seen, is finding a place from a financial standpoint in the animal world as well as for higher purposes among humans.

Three general methods of treating the mink in captivity have been used, all of which will be outlined.

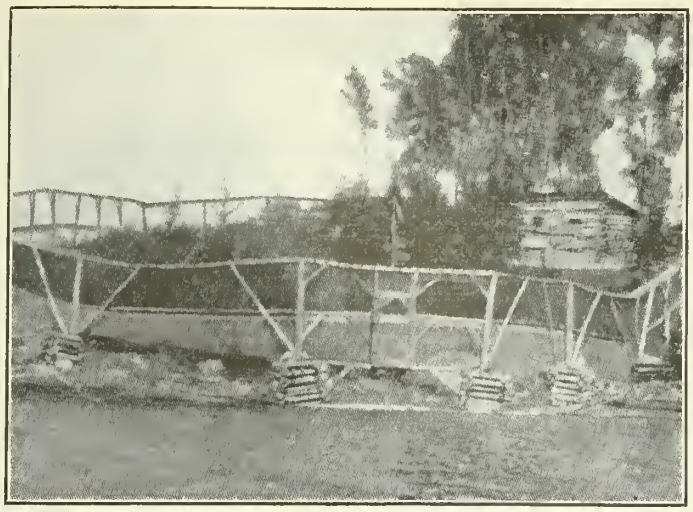
In the United States what is called the "Pen" system has ben largely used for a number of years. Following this plan each animal is confined in a separate pen, each of which is supplied with a good-sized trough of water. The males are admitted to the pens of the females at mating time and then removed.

While good results are claimed fro mthis system, which involves less outlay and probably less care than the others, it is impossible, for reasons stated, to ascertain with any degree of accuracy, what success has ben achieved. It would seem, however, that the removal of the animals to such a large extent from the conditions under which they naturally live and thrive would tend to considerable trouble.

A second plan, known as the "Colony" method, is also somewhat largely used in the United States and has been adopted by several breeders in Canada who have given the matter considerable study and should know what they are doing. According to this plan the male and female mink are kept in colony houses with access by means of a runway to a limited section of a running stream.

The third plan, which approximates most closely the natural conditions under which the mink lives, would seem to the novice, at least, to be most likely to yield satisfactory results. More information, also, is available in regard to the working out of the practical side of this method. This consists in confining the mink, by means of wire fencing, within a good-sized enclosure, where, since they are not able to procure sufficient food, they are fed suitably and somewhat carefully watched to avoid injury. Beyond this and the proper selection of males at the breeding season the animals are left pretty much to themselves.

Two or three ranches, at least, of this last type, are in operation in Canada, with apparently some considerable success and it seems probable that further development in mink farming will be along this line. The photographs accompanying this article were taken at these institutions and are consequently representative of actual conditions.



A Quebec mink ranch showing method of fencing enclosure and character of ground. —From "Fur-Farming in Canada."

The greatest difficulty and outlay is occasioned, of course, in making the ranch enclosure secure. After a good deal of experience and disappointment the authorities seem to agree on something like the following plan, which, by the way, is followed, with minor differences in constructing the enclosure for foxes and practically all the other fur-farmed animals:

As is well known, mink must have access to fresh water. It is necessary, therefore, that the enclosure be beside or adjacent to a running stream. A rocky, partly-wooded plot would seem to approach most closely to the ideal habitat.

To fence this enclosure so as to provide absolutely against the escape of the somewhat valuable animals is no easy matter, since mink, in common with most of the fur-bearers, will both dig and climb, and the difficulty is intensified with the mink because of the necessity of enclosing the section of a stream.

The Quebec ranches are enclosed by wire-mesh fences twelve feet high. Where practicable the fence is run down to rock, but where this is not convenient what is called a carpet wire, an extra width of three or four feet, is laid horizontally just inside the fence well underneath the natural ground level. This has been found to be a very practical protection against escape by burrowing. To achieve the same object in a more certain way the owners of a few of the fox ranches have bedded the bottom of their fence in banks of concrete. A similar wire protective carpet laid on the bed of the enclosed section of the stream and well pegged down will provide against escape in this quarter. If the stream is a small one the fencing may be carried on posts sunk in the usual way in the land section. Where it is large or deep, however, the ice and frost are likely to cause a good deal of trouble. This danger has been avoided in one of th eQuebec ranches by placing the posts in small butments. This method is well illustrated in one of the photographs.

Climbing, another danger, is provided against by fastening a strip of sheet iron a foot wide at a point from a third to half way up the fence. The mink finds easy footing in the meshes of the wire and gets this far without difficulty but the smooth iron surface allows no foothold and further progress is of course impossible. As a double precaution most of the ranches are equipped with an overhang of wire or sheet iron at the top of the fence. This in itself would seem at first to provide adequate security but still another factor has to be guarded against. If the animals should by any means get to the top of the fence and find their escape blocked, in many cases they are likely to drop back to the ground with very probable danger to limbs. Constant rubbing of the fur against the wire in climbing, also, is likely to wear it off in spots and seriously depreciate its value.

Experienced mink men seem to agree that the best den for the male mink is provided in a good-sized cave or grotto with a plank or concrete cover. An opening should be left in the cover, or it should be on hinges so that food can be readily supplied. The pens, or nests of the females are made in box-like form about two feet square by twelve to eighteen inches high and are inserted in a much larger box which is hidden as far as possible by earth or rock so as to approach somewhat closely to natural conditions. On some ranches these box nests are made to slide in and out like drawers so that they may be pulled out at desirable times for purposes of examination. A quantity of hay, fine straw or excelsior is provided for the bedding of the nests.

Authorities seem to differ somewhat as to what kinds of food and what quantities are advisable. One ranch manager reports that the food supply given their animals is made up almost entirely of fish. At other ranches eggs, bread, fish and meat in varying proportions are

A "manufactured" nest. This gives some idea of the care taken to approximate natural conditions.—From "Fur-Farming in Canada."

A prime ranch-bred mink sitting on the top of his pen, the cover of which has been removed. This fellow is worth $20 to $25 as a breeder. His coat would bring from $8 to $10.—From "Fur-Farming in Canada."

given. Still others recommend corn mush and milk or a hash of mush and meat in addition to this list. The latter authority advises feeding meat or fish only twice a week.

Under the "pen" and "colony" methods a great deal of care has to be taken with the animals at mating time, since the male usually exhibits a good deal of ferocity during this period, which occurs about the latter half of February or the first week or two of March. In the "natural" method ranches the sexes usually seek out one another.

Gestation occupies a period of about six weeks and the litters run from two to six. The mother seems quite capable of looking after the young minks for the first six or seven weeks, for the greater part of which time they are blind. Very shortly after sight comes they are led out of the nests and begin eating solid food. Considerable trouble occurring at this stage has led to the advice that unless the female is of gentle disposition the young should be taken away from her. There seems to be a tendency, under tense conditions of partial captivity, for the males to kill the young and also for the females to kill each other's pups. One male animal to five or six females has seemed to give the most satisfactory results in breeding.

One company whose prospectus has lately been issued, is going into this industry on a large scale. If it can do so profitably, does it not seem probable that a farmer who will take the trouble to study the matter thoroughly and who is willing to spend some little time in experiment, will be able also to reap good profits even though he must engage in this most interesting form of stock-raising on a smaller scale?

The Abuse of Truck Service

HAULING by motor truck, says *Leslie's Weekly*, is an enterprise of so comparatively recent origin that it was not many years ago that commercial vehicle companies were wont to make any promise or guarantee of maintenance and service to induce their prospective customers to install the new system. This attitude has proved beneficial to the industry as a whole, is that it has prompted manufacturers to establish "service stations" in all of the large cities, and it has thus served to place the truck business on a firmer foundation. On the other hand, promises and guarantees made by over-enthusiastic and irresponsible salesmen can place a burden on the service stations and manufacturers entirely beyond the bounds of reason, and it is no secret that this has indirectly resulted in the failure of many truck concerns. To keep on hand a complete stock of repair parts and to stand ready at all times to furnish expert workmen for emergency repairs and overhauling is the ultimate destiny of a service station — but this work must be rendered at a fair profit to the company maintaining the station It is manifestly unfair to the manufacturer to expect him to repair, free of charge, damages that have been caused by gross carelessness or the employment of incompetent help, and yet some users seem to think that the makers of the trucks assume a moral and legal responsibility to "keep her running" at absolutely no cost to the owner.

Such an attitude on the part of customer, and the acceptance of it by the manufacturer, can do much to injure the industry and to retard its logical and sure development. The interests of the present or prospective truck user, as well as those of the manufacturer, lie in the proper regulation of the prevailing service abuses and guarantees.

Spanish Gold

A Story of a Search in Ireland for Hidden Spanish Treasure Where the Quaintest of Humor Pervades a Pleasing Romance

By GEORGE A. BIRMINGHAM

"I wonder you didn't. But I dare say the post is rather irregular here. The fact is that the Board—not your Board, you know, but the Board of National Education—has determined to build a school on the island and asked me to run across and look out for a site."

The Major with a struggle sat upright in his hammock chair. His mouth opened. He made an effort to speak.

"It's all right," said Meldon soothingly. "I know what you are going to say—official reticence, and that sort of thing. But it doesn't matter mentioning these things to Higginbotham. He's in the Government service himself."

The Major opened his mouth again, but his thoughts failed to express themselves. Meldon felt the necessity of modifying his statement.

"Of course the Board didn't actually send me here specially for the purpose. They heard I was coming here with the Major, and just dropped me a line to say that I may keep my eyes open and let them know if there was a suitable site for a school."

Higginbotham stared in blank amazement. As an official he knew something of the ways of Irish Governments and was seldom astonished at their doings. He had swallowed, with some little misgiving, the story of Major Kent's mission. It was just possible that a Lord-Lieutenant and a Chief Secretary, in a moment of temporary insanity brought on by over-work and much anxiety, might have sent an expert to make a geological survey of Inishgowlan. It was quite incredible that the National Board of Education could, of its own free will, intend to build a school. Meldon was unpleasantly conscious of having aroused scepticism. He nerved himself to reduce Higginbotham to a condition of passive belief.

"The Board has heard of all you're doing here," he said, "and naturally wants to put a finishing touch to the work by providing for the education of the children. After all you've done in the way of improving the material conditions of life, the Commissioners feel that it would be a national disgrace if the rising generation is left in a condition of barbaric ignorance. You recollect what the hymn says:

"'Every prospect pleases
And only man is vile.'

That's how the Commissioners feel, and you can't blame them."

"But there are only nine children

Synopsis of Previous Chapters

The Rev. J. J. Meldon is an Irish curate, who, with his friend, Major Kent, is taking a trip to the island of Inishgowlan, in search of treasure supposed to have been hidden there by a captain of one of the vessels belonging to the Spanish Armada. The Major does not believe in the existence of the treasure, but Meldon is very sanguine.

On arriving at the island they find an old college chum of Meldon's named Higginbotham, who is surveying the island for the government. Wishing to conceal the object of their visit Meldon informs Higginbotham that Major Kent is an expert mineralogist sent by the Government to examine the geological formation of the island. The Major is much annoyed at this, and Meldon then informs Higginbotham that he has been sent by the Board of Education to find a suitable position for a school on the island.

on the whole island," said Higginhotham.

"Still there are nine. Why should nine children go ignorant to their graves? It isn't the fault of the nine that there aren't more. Besides, there may be more. That's what the Board of Education feels—there may be more. The Commissioners are long-headed men, Higginhotham; not a cuter lot on any Board in Ireland. They look to the future. They see before them generations of Thomas O'Flahertys yet unborn, little toddlers coming out of those slated houses of yours with copy-hooks in their chubby fists, all of them filled with a desire for knowledge. I tell you what, it's an inspiring picture, say what you like."

"Where," said Higginhotham, overwhelmed by his vision of the future, "where do you propose to build the school?"

"There's a house," said Meldon, "if you can call it a house, at the end of a particularly abominable bohireen. The thatch, what there is of it, is tied on with straw ropes, and there's only one small window to it that I could see. It's just under the brow of the hill above the place we're sitting now. It's bang in the middle of the island, and it's just the place for a school."

"That's the very cabin we've been talking about," said Higginbotham. "That's Thomas O'Flaherty Pat's—the place he won't give up."

"Oh, I'll manage him," said Meldon. "Don't you worry. Give me a week and I'll talk the old boy round. And now I think the Major and I had better be getting back to our floating home. We've got to navigate the bay in a punt that's more like the half of the cover of a football than anything else, and I don't much fancy doing it in the dark."

The Major remained obstinately silent while Meldon paddled him home. Nor did he make any reply to Meldon's remarks while undressing to go to bed. Half an hour later he put his head over the side of his bunk and said:

"I'm not going to stand this, J. J. It's all very fine. I don't deny that you're a fluent liar, but I'm not going to be made a fool of. I won't stand it. Either you tell Higginhotham to-morrow that you've been pulling his leg, or I leave the island. Do you hear me? Why, man, we might get into serious trouble if these stories of yours ever came out. Are you listening to me?"

"More or less," said Meldon sleepily. "Don't you worry. Leave it to me! I'll manage all right. Good-night, Major. Don't you get dreaming of pliocene clay."

CHAPTER VI.

Meldon woke early next morning. At six o'clock he plunged overboard and swam delightedly round the yacht. Treasure or no treasure, he intended to enjoy his holiday, and the June weather was as good as could be wished for—better than any reasonable man would dare to hope. Half an hour later he roused Major Kent, and then set to work to light the stove in the galley. Every now and then he poked his head up and shouted a remark to the Major, who was making his toilet on deck.

"We'll go ashore directly after breakfast and set to work. Have you any plan of operation in your mind?"

The Major stopped shaving and, razor in hand, looked over to the place from which the red head of the curate had already disappeared.

"I have not," he shouted. "I left that to you. I took it for granted that you would know the exact spot where the treasure lies, and that I would have nothing to do but walk there and put the gold into a hand-bag."

The Major, though not intellectually nimble, prided himself on his power of polished sarcasm. He was disappointed to find that his taunt had apparently failed to reach the curate. He received no reply; but a noise of frizzling and a pleasant smell of bacon melting on a frying-pan reached him from the fore hatch. Then Meldon's voice, this time without the appearance of his head, reached him again:—

"There are only six eggs. I suppose I may as well fry them all."

"Yes, and some ham along with them."

"It's bacon I have on the pan, but I'll do a slice or two of ham for you, if you like."

Half of Meldon's body emerged from the hatchway, and the shells of six eggs were pitched overboard.

"It was full tide at six this morning," he said, returning to the subject of the treasure hunt; "I expect by eight o'clock we ought to be able to make our way round the base of the cliffs on the west side of the island. We'll be all right there till one or two o'clock, any way. What do you say?"

The Major finished shaving and proceeded to fill a tin basin with water.

"What do you expect to take by doing that?" he said.

He got no answer for a time. The frying-pan demanded Meldon's whole attention. The noise of frizzling increased rapidly. The Major balanced his basin on the cabin skylight and scrubbed himself vigorously. On the deck beside him lay a cake of soap, a towel, and a small piece of pumice-stone. They who go down to the sea in ships are apt to get tarry substances stuck on their hands, and the Major was a man who liked to be clean once a day at least. Beside the basin on the skylight lay his tooth-brush and a box of carbolic powder, but he did not get a chance of enjoying these.

"Breakfast's ready," shouted Meldon. "Shall I drag it all up on deck? The air's pleasant."

"No, let's be as civilized as we can and eat in the cabin."

Realizing that the curate's appetite would not endure much delay and that his own chance of securing a fair share of the six eggs depended on his promptitude, the Major slipped on the jacket of his pyjamas and went below. The eggs, bacon, and ham steamed together in a heap on a dish. Plates, knives, and forks were set out. The teapot and a tin of condensed milk stood at the end of the table.

"I call this jolly," said Meldon. "I only wish my little girl was here to take a share with us."

"God forbid!" said the Major, with pious gravity. "How can you wish for such a thing, J. J.? Just fancy a woman on a boat like this."

"You don't know her. She wouldn't mind a bit. In fact she'd enjoy roughing it. It would be the greatest fun out for her."

"Well, it wouldn't be any fun for me," said the Major. "But tell me, what's this plan of yours about scrambling about among the rocks?"

"I've given a lot of serious thought to the subject of the treasure," said Meldon. "I sat for nearly an hour on the top of this island yesterday afternoon, and, as the hymn says, 'I viewed the landscape o'er.' The result is that I've picked out the scene of the shipwreck."

"Oh, have you? You're quite certain you're right, of course."

"Not quite certain—tolerably certain. It's this way. The galleon——"

"The what?"

"The galleon. I wish you'd try not to interrupt me so often. All Spanish ships were galleons if they were big and caraques if they were small. Our one was big, therefore she must have been a galleon. We may just as well call things by their right names and go to work in a business-like way. The galleon was wrecked. Very well. Where was she likely to be wrecked? On the west coast of the island."

"I don't see why."

"Because of course if she'd got to the east side she'd have been in calm water under the lee of the land, and she wouldn't have been wrecked."

"That doesn't follow. The wind might have been nor'-east."

"I'm pretty sure it wasn't," said Meldon, "because it hardly ever is. Even nowadays, with all the improvements there are in things, there's hardly ever a nor'-east wind on this coast, and in those days —two hundred years and more ago—I expect the wind just shifted about through three points of the compass, nor'-west, west, and sou'-west. However, if you like. I'll argue out the other possibilities afterwards. For the present we'll say the galleon was most likely wrecked on the west side of the island. Now, put yourself in the place of the Spanish captain."

"I've done that before," said the Major, "and it was no good."

"I remember now; it wasn't. But anyhow we came to the conclusion that he stored his treasure in some hole in the rocks. Obviously, on account of the weight of the treasure and the difficulty of carrying large quantities of loose coin, he'd choose a hole as near the scene of the shipwreck as possible. Having fixed the scene of the shipwreck——"

"You haven't explained how you fixed that."

"I can't either till I show you the place. Once you've seen it you'll admit

that it is by far the likeliest place for a thing of the kind. In fact it's the only really suitable place I saw. What we've got to do is to search the rocks in the immediate neighborhood for the hole that caught the eye of the Spanish captain."

"That's all well enough. But the treasure, if there ever was any treasure, was hidden more than two hundred years ago. The place must be entirely altered since then. I understand that the whole island is made up of pliocene clay."

"What's that got to do with it?"

"Of course," said the Major, "I don't know what pliocene clay is. But if it's like any other kind of clay it'll be soft stuff, and any hole there might have been two hundred years ago will be all washed away or covered up now."

"In the first place," said Meldon, "we've only got Higginbotham's word for it that the island is pliocene clay, and in the next place I don't believe pliocene clay is that kind of stuff at all. It stands to reason that it can't be. Why, man, if it was anything like common clay the whole island would be gone ages ago. You take my word for it, pliocene clay is some uncommon hard substance that doesn't melt anything worth speaking of in a couple of centuries."

"Then why is it called pliocene clay?"

"Oh, that's the sort of way those scientific Johnnies talk. I believe they do it just to deceive the general public. You know they speak about lunacy, although they know jolly well it hasn't got anything to do with the moon. What they like is to get hold of a name which is sure to deceive plain, straightforward men like you and me, and then when we take it at its face value, put the obvious meaning on to one of their own words, they make us look like fools for not knowing any better. It's just the same with typhoid fever. I was talking to a doctor once, not a common castor-oil and linseed-poultice doctor, but one of the sort that runs to germs and microscopes and things, and he told me —I forget exactly how he put it, but it amounted to this: that any one who went by the name typhoid would get on a wrong track altogether—wouldn't, in fact, have proper typhoid but something else. I think he said he'd have something like typhus, which is an entirely different disease; beastly infectious, for one thing, whereas the real typhoid, the thing that the name doesn't mean, if you understand me, isn't catching at all. Which just shows how much trust you can put in scientific names. No, Major, you take my word for it, pliocene clay is some jolly hard kind of rock—igneous, I expect—and this island is pretty much as old Don What's-his-name found it when he scrambled on shore out of the galleon."

"Very well," said the Major, "but I believe we're on a fool's errand. I doubt very much if there's any treasure there at all. And I'm sure we won't find it."

"Don't croke," said Meldon. "You get into your duds and light your pipe. I'll wash up and get out the punt. It's getting on for eight o'clock and we ought to be off."

An elderly man and five out of the nine children resident on the island stood on the end of the pier when Meldon and the Major landed. The man was clad in a very dirty white flannel jacket and a pair of yellowish flannel trousers, which hung in a tattered fringe round his naked feet and ankles. He had a long white beard and grey hair, long as a woman's drawn straight back from his forehead. The hair and beard were both unkempt and matted. But the man held himself erect and looked straight at the strangers through great dark eyes. His hands, though battered and scarred with toil, were long and shapely. His face had a look of dignity, of a certain calm and satisfied superiority. Men of this kind are to be met with here and there among the Connacht peasantry. They are in reality children of a vanishing race, of a lost civilization, a bygone culture. They watch the encroachments of another race and new ideas with a sort of sorrowful contempt. It is as if, understanding and despising what they see around them, they do not consider it worth while to try and explain themselves; as if, possessing a wisdom of their own, and aesthetic joy of which the modern world knows nothing, they are content to let both die with them rather than attempt to teach them to men of a wholly different outlook upon life.

"I shouldn't wonder," said Meldon to the Major, "if that was old Thomas O'Flaherty Pat himself. He has a royal look about him, hasn't he? But I can't say much for his robes of state. I wonder if he'd talk to us." He approached the old man. "Good-morning to you. Glorious weather we're having. Looks as if it meant to hold up, too."

"Ni Beurla agam" ("I have no English"), said the old man.

"Come now," said Meldon cheerfully, "you needn't play that game off on me. I can understand your doing it to Higginbotham. He's a Government official, and naturally you distrust him; but I'm a private man, I don't want to turn you out of your house, and I won't give you away."

"Ni Beurla agam air bith. Ni aon focal" ("I have no English at all, not one word"), said the old man.

Meldon turned to the five children, and singled out a little girl who stood staring open-mouthed at him.

"Molly O'Flaherty," he said, "come here."

The children, holding on to each other, edged away doubtfully.

"Bridgy O'Flaherty," said Meldon, "if you're not Molly I suppose you're sure to be Bridgy. Tell me what the old gentleman's name is."

He stepped forward suddenly and seized the child by the arm. She struggled for a minute and then began to cry.

"There now," said Meldon soothingly, "don't cry; I'm not going to hurt you. Major, give me a penny. You haven't got one? Never mind, a sixpence will do quite as well. Here now, Nora Acushla, look at the pretty silver sixpence. That's for you. Stretch out your hand and take it, and I'll tell your mammy what a good girl you are."

The child seized the sixpence, stopped crying, and looked up timidly to Meldon's face.

"That's right," he said, patting her head. "Now we're friends again. Tell me now, Nora—is it Nora they call you?"

"It is not," said the child. "It's Mary Kate."

"There now. I might have guessed it. Sorra a prettier name there is in the whole province of Connacht than Mary Kate, nor a prettier little girl than yourself. I've a little girl of my own away in Dublin, and they call her Gladys Muriel, but I declare I think Mary Kate's a nicer name. Tell me now, Mary Kate, is Thomas O'Flaherty Pat the name they have on the old man there?"

"It might," said Mary Kate.

"Off with you then," said Meldon. "Have you got the sixpence safe? Take it up to the gentleman that lives in the new iron house, the gentleman from the Board—you know who I mean."

Mary Kate grinned.

"Is it the man that does be measuring out the land?"

"It is," said Meldon. "That exact man. Do you take your sixpence up to him and ask him to give you the worth of it in sugar candy. Don't be put off if he tells you he hasn't got any. He has sacks and sacks of it stored away there in the house, and he does be eating it himself whenever he thinks there's nobody looking at him."

"Do we go round the north or the south side of the island," said the Major, as he and Meldon left the pier, "to reach this treasure-cave of yours?"

"The scene of the shipwreck," said Meldon severely, "is about the middle of the west coast. We'd get to it just as quick one way as the other, but I think we'll go by the north. Higginbotham's house is to the south of us, and there is no use passing his door oftener than we can help; especially just now when Mary Kate is approaching him on the subject of sugar candy."

Walking in Inishgowlan is slow work because there are no regular roads, and because the whole island is laced with loose stone walls which have to be climbed. These are built not so much to separate the fields from each other, as with a view to collecting into manageable heaps the stones of which the walls consist. Originally the stones lay scattered over the grass in such numbers that ploughing and even digging were difficult. Here and there, where it is evidently impossible to pile any more stones on the walls without making them dangerously top-heavy, cairns have been built in the middle of the fields and the superfluous metal got rid of in that way. This superabundance of stones was a serious trouble to Higginbotham. He had devised a plan for building a very

(Continued on page 61.)

The Winter Sleeping Room

Night Air is no Longer Considered Dangerous

By GENEVIEVE

The health of her household is one of the first considerations of the homemaker, and during the winter this needs particular attention. In this article the writer deals with the care and furnishing of the winter sleeping-room so as to secure the maximum of vitality during the hours, when in many homes the sleeper is subject to conditions most conducive to running down health and inviting disease. Every housewife will find here some timely suggestions. Many farmers, brave and progressive in many things, will allow himself and his family to poison their lives in ill-ventilated homes—there should be no tubercular trouble in the country homes.—Editor.

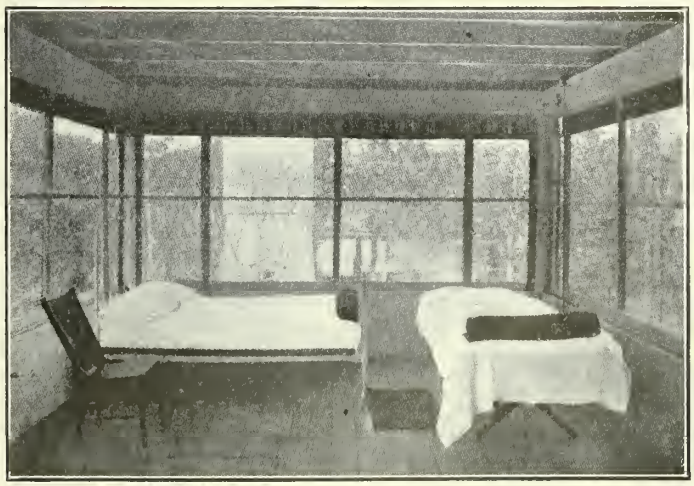
THERE is an old superstition which seems to die hard with some people that night air is very bad. Children particularly, or persons with any frailty of constitution were zealously protected from any possibility of catching a breath of it, and many of them grow up with strong lungs and general good health; but the credit might be given to the cracks about doors of the log houses and to the open fireplaces rather than the closed windows.

The increase of illness during the winter and early spring is a startling result of bad habits of living in the home and especially bad habits of living during the night time. It is during these hours when the system is relaxed and more susceptible to bad conditions than during the day, that the least attention is generally paid to securing fresh air for the lungs. Everybody knows that fresh air is necessary to maintain good health, and almost everyone admits that it is just as necessary in the winter as in the summer time. It is a recognized fact that the fresh air we get during the cold season is more invigorating than what we get in the summer, but there are still some people who have not the courage of their convictions sufficiently strong to more than open their window a half-inch or so, on ordinarily cold nights, and close them completely when the thermometer comes anywhere near zero.

Many excellent health authorities tell us that the ideal plan is to sleep out of doors the year round, and in cases of threatened lung trouble it is often the only safe method for the patient; in fact it is considered a positive cure of incipient lung trouble. Those who have tried it, usually declare that nothing would tempt them to go back to conventional methods, but we must remember that out-door sleeping is dangerous if the body is not kept at an even temperature.

The bed is usually placed on a porch or balcony which should be well equipped with awnings for protection on windy nights; and there are sure to be some stormy nights during the winter when out-door sleeping is neither safe nor sensible. A cot with woven wire springs and a felt mattress make a good bed, and an old buffalo robe, or newspapers, something that will not let the air through, should be put under the mattress. Linen sheets should never be used; woollen blankets, or a heavy soft Turkish sheet with woollen blankets for covering, retain the heat for a long time. The bedding should be well aired outside in the morning, but thoroughly warmed in the house before the bed is made up at night. When this is done put a hot water bag at the foot, another spine-bag to protect the back, and have the patient get right in. With warm light covering, a warm hood, and a half-blanket to tuck around the neck where there is likely to be an air space, there is no reason why anyone should not sleep warm while inhaling the life-giving oxygen of fresh, cold air.

It is not necessary for every person to sleep out-doors, but no one can afford to miss the good that comes from pure, cold air, and there is no better way to get it than while one is asleep. It contains more oxygen than does warm air, quickens all the vital processes and tones up the entire system. One who sleeps in a warm room will awake in the morning tired and nervous; the oxygen has not been sufficient to supply the waste of the body. If you have not been educated from babyhood to sleep with your window open it is time to learn now.



An ideal sleeping room

First arrange your room so that you do not sleep in a direct draught, but if that is impossible a simple device may be used. Cut a heavy piece of cotton six inches longer than the width of the window frame and eighteen inches wide. Tack it along its lower edge to the window sill and hook the upper corners to the sides of the window frame. The window may then be opened wide, but the current of air will be directed upwards. Or have frames similar to screen frames made to fit under the lower sash when it is raised. Over these stretch strong muslin tightly and nail it securely, using narrow wooden strips to hold it and prevent tearing. These supply air while they prevent winds and direct draughts.

During the winter and spring months we have more trouble from pneumonia than any other disease, and naturally enough the public seems to have the idea that it is the result of exposure to cold. A paragraph from a bulletin published by the Department of Health states that the greater frequency of this disease in the winter is due to people housing themselves in tightly-closed, over-heated, badly ventilated rooms and inhaling the resulting foul air. Nature has provided us with wonderful powers of resistance against the little pneumonia bug, when we live in pure air, but the lowering of vitality caused by living in badly ventilated houses accounts for the greater prevalence of the disease in the winter months.

In the winter sleeping room the bed is a consideration quite as important as the ventilation. The skin as well as the lungs is an organ of excretion, and because the skin is more active at night than in the day time in eliminating waste from the body it follows that the housemother has an extra responsibility in providing beds with the right kind of bed clothing, and in teaching children the importance of removing at night all clothing that has been worn during the day. A thin mattress may mean a cold bed. If this is the case a piece of heavy wrapping paper placed between the mattress and springs will remedy the trouble. The lighter the top covering the better, but if down or lamb's wool are too expensive, a quilt made of two layers of flannelette with an interlining of newspapers will prove an excellent covering over the blankets. After all, since we spend about one-third of our time in sleep, the money spent in a good bed is a pretty safe investment.

Hot Supper Dishes

Simple Preparations that are Savoury and Substantial

By WINNIFRED MARCHAND

HOW often have you stopped with some perplexity to ask yourself "What can I get for supper?". Everyone will be hungry; the children have taken their lunch to school, and the men have been working out of doors all day. You have cooked a dinner at noon, so you don't want another dinner at night, yet you must have something both savory and substantial. Moreover, it is often desirable that supper shall be prepared from leftovers, not necessarily scraps, but food that has had its "long cooking" while the dinner fire was on, so it saves work to have forethought for the supper in preparing the noon meal, and to cook enough potatoes or whatever you are going to need, for both. Since they no longer depend on the larder's store of preserves and pies and cake and cookies to furnish the evening meal, many house-mothers find it difficult to plan a series of changes in the supper menu, but there is no meal which allows so much scope for variety.

Do you ever start your supper with a cream soup? Bound with a tablespoon each of flour and butter to a cup of milk, and flavored with salmon, tomato, onions, celery, corn, peas, beans or flaked fish, they are both palatable and nourishing. Where vegetables are used, except in the case of potatoes, the flavor is more pronounced if the water in which the vegetables are cooked is used as part of the liquid. The cooked vegetables are generally rubbed through a sieve and add to the thickened liquid or where potatoes, carrots, celery or onions are used they may be cut in small uniform pieces before cooking.

Potato Dishes

Potatoes in some shape or other usually form one of the staple supper dishes. Scalloped potatoes prepared in the ordinary way, by putting a layer of sliced potatoes in a pudding dish, dredging with flour and dotting over with butter, sprinkling with salt and pepper, and repeating until the dish is filled, then adding milk to come nearly to the top, are among the best potato dishes, as the fat and proteid of the butter and milk add much to the food value. This is true also of a Potato Puff, where an egg, a tablespoon of butter and a half cup of milk are added to two cups of mashed potatoes, the mixture beaten until very light, piled in a buttered dish and baked until delicately browned. Or if you care to go to a little extra trouble for the sake of appearance, the potatoes may be roasted, the tops cut off, the pulp scooped out and beaten light with egg, milk and a little butter, the mixture piled in the half shells and delicately browned in the oven.

There is no limit to the ways of warming over potatotes from the ordinary "fried" and creamed potatoes (and, by the way, have you ever, after cutting your potatoes in cubes and adding a white sauce, sprinkled them with grated cheese and set in the oven until the cheese melts?) to the croquette, where cold mashed potato, either alone or combined with egg, chopped cooked meat, cold flaked fish or cooked vegetables is shaped into balls, dipped in beaten egg, rolled in cornmeal or dried crumbs, and fried or browned in the oven. Potato cakes are made by kneading into cold mashed potatoes as much flour as it will hold, rolling out to a thickness of about three-fourths of an inch, and browning on a greased frying-pan or in the oven. If you like to split these, spread with butter and fill with slices of crisp, hot bacon or minced meat, moistened with rich gravy, you will have a new and decidedly popular supper dish.

In serving meat and fish for supper the meat-pie has always been a favorite preparation with the housewife who wishes to provide something substantial. The pastry for this may be left over from the last baking, as pastry improves rather than deteriorates if kept in a cold place. Instead of pastry we might frequently use a mashed potato crust, which has the advantage of being easier of digestion. A tomato pie is one of the most delightful made-over supper dishes. Line a baking dish with fine bread or cracker crumbs, add a layer of chopped meat well seasoned, then a layer of stewed tomatoes, another of meat, and so on, covering the top with a layer of buttered crumbs. If the juice from the tomatoes does not moisten the meat well, add a little stock or gravy. Bake in the oven until the crumbs are well-browned. Then we may scallop cold cooked meat or fish, putting it in a buttered dish in alternate layers, with a white sauce, using for the sauce the proportions of two tablespoons each of flour and butter to one cup of milk, covering all with a layer of buttered crumbs and baking until the crumbs brown. Cooked rice may be substituted for the white sauce. In scalloping salmon, a method which gives a more delicate, but also more expensive dish, is to make a baked custard mixture, omitting the sugar, and adding about an equal quantity of salmon. Bake very slowly to avoid curdling.

Savory toasts are just the thing for a hot supper. Chop whatever meat is used. Fry a few spoonfuls of chopped onion in a little butter, being careful not to let it brown, add as much flour as butter, blend well and stir in stock or water, using one cup of liquid to two tablespoons of flour. When this is well thickened add the chopped meat and let it heat through, but not boil. Boiling would toughen the meat. Season well and pile on squares or rounds of fresh, crisp toast. Cooked green peas may be used instead of meat.

Then we must not forget the cheese dishes, which fulfil every requirement of a nutritious, digestible supper. The fact that cheese alone, being such a concentrated food, and one difficult of mastication on account of its consistency, is difficult of digestion, causes some people to be rather dubious about using it in any form. When combined with milk, or starchy material like macaroni, rice or crumbs, it is no longer a concentrated food; the grating in the preparation overcomes the difficulty of mastication, and the extra starchy material, together with the high percentage of fat and proteid in the cheese, makes a very nutritious and well-balanced ration.

Macaroni Cheese

The simplest way to prepare macaroni and cheese is to boil the macaroni in salted water for half an hour, drain, blanch by rinsing with cold water, and pour over a white sauce in which grated cheese has been melted; allow one-fourth cup grated cheese to a cup of white sauce. After this it may be sprinkled with buttered crumbs and browned in the oven before serving. Tomato juice may be used instead of the milk. A cheese souffle is a more delicate dish, but also more expensive. Make a thick white sauce, using two tablespoons butter and three tablespoons flour to half a cup of milk. Add one-half teaspoon salt, a few grains cayenne, and one-fourth cup grated cheese. Remove from the fire and add the well beaten yolks of three eggs, cool and fold in the stiffly beaten whites. Pour into a buttered baking dish and bake twenty minutes in a slow oven, or until it springs back when touched lightly. Serve at once. A fondue is much like a souffle, but less expensive and less delicate, as a cup and a half of soft, stale bread crumbs are substituted for two of the eggs.

In any cheese dish a few grains of cayenne pepper aid in the process of digestion by stimulating the flow of the digestive juices. Careful seasoning always helps in this way, and almost as important in encouraging the stomach to do its work is the catering to the eye as well as the palate. Many supper dishes are made-over dishes, and therefore call for a little extra pains in seasoning and garnishing.

The Woman Who Spends

And Some Homely Truths of Domestic Economy

By ETHEL M. CHAPMAN

> The economy of right uses depends largely upon the home-maker, since a man's influence in household expenditures is generally felt but spasmodically, in the purchase of something like a new rug or Johnny's winter overcoat. Perhaps this is why domestic economy has become so largely a woman's problem, and domestic economy does not mean saving, it means spending so as to get the best returns.—Editor.

IN OLDEN times, we are told, a woman thought and thought and thought before she spent, often making the spending a burden. Now she spends and then thinks and thinks and thinks. This may be true, or it may not; anyway we know that spending for the needs of a whole household is frequently left almost entirely to a woman's judgment, and the problem is not an easy one. No one can tell another how to spend; no person knows the motives, and plans, which actuate a woman in the spending of all she has, but there are some general principles that will stand thinking about.

The Sacrifice at the Bargain Counter.

If there is one thing more than another that influences us in the spending of money to our sorrow, it is the shop window display and the bargain counter. Sooner or later we learn the truth of Old Peter Bines' philosophy: "**In this world of human failins there ain't anything ever can be as pure and blameless and satisfying as the stuff in a bake-shop window looks like it is.**" When we make up our minds as to what we want, and then go out and hunt it, instead of depending on the window-dresser's suggestion we stand a better chance of being satisfied. For the same reason, bargain sales are dangerous for the woman who hasn't an educated idea of the value of the goods, or who has a frailty for carrying home "bargains" that she doesn't need just then, and keeping them for the proverbial seven years. Of course there are legitimate bargains, such as January sales, when imported cottons and linens have just come in and sell a little cheaper before they are shelved; or the August sales usually brought on to get rid of summer goods before bringing in the winter stock. Soiled goods, especially in linens, cottons and wash dresses; fire sales, travellers' samples, and goods in unsalable colors and styles which you are sure can be dyed or altered, may also be real bargains. However it is worth considering that while there is generally a sacrifice in bargain sales it is often the customer who makes it.

Where Money Goes to

A modern parody of an old fable says: "The root of all evil is the lack of knowledge of where money goes to." We know that we spend money for housing, furniture, food, clothing and what might be called higher living including education, recreation and church and charity contributions, but we do not always stop to consider whether we are making a well-balanced division of our expenditures for these things. In fact we generally have no way of knowing just how much we are spending for different lines because we keep no record of any kind; the practice of keeping household accounts seems as faddish to some women, as it looks complicated and troublesome to others. There is no need at all of having an elaborate set of books, so long as they show just where the money is going; then if we find our meat bill, for instance, going away out of proportion to something else, we at once begin to study out how to cut that down by using substitutes or cheaper cuts, and placing the balance of the money where it rightly belongs.

About the simplest method of keeping household accounts is the envelope system. Several envelopes are labelled, each with the name of the particular division of expenses which it is to hold. The income is divided and the amount apportioned put into each envelope with a card or slip of paper to record the amount spent. While this requires little knowledge of bookkeeping it involves keeping a lot of money on hand and is more cumbersome than having a Day Book, ruled with lines at the left for the date and at the right two double columns for receipts and expenses, and once a week or once a month copying this into a kind of ledger which might be ruled something like this:—

Date	Receipts		Groceries		Meat		Extras		Clothing		Church		Savings		Etc.

How one woman tabulates her expenses.

To the woman who has handled money for years, and managed without keeping accounts, all this may seem like so much nonsense. It does look like that until you have tried it.

Where Part of the High Cost of Food Comes In

The great cry that is going up all over the world against the high cost of living presents one of its serious phases in the food problem. We are familiar with the causes cited and many of the remedies suggested, but the only immediate way of relieving the pressure for the housewife is to use the best methods of buying. Ordering by 'phone instead of seeing just what you are getting is not by any means a safe practice unless you are sure of your dealer. The towns-woman who patronizes the retailer instead of going to the market and buying direct from the producer must not overlook the fact that she is paying a commission of from fifteen to twenty-five cents on every dollar's worth of farm produce she uses. In the country towns and villages, quite a saving can be made in buying imperishable goods in large quantities from the local dealer, because we cannot do without the local stores, and cannot expect to keep them without some substantial support. It is also a matter of economy to buy certain groceries in bulk instead of in packages and where the goods in a store are properly protected (which depends very materially on the attitude of the women of the locality) there is no reason why a great deal of the bulk stuff should be in any way objectionable. Then there is the question of buying things out of season and of buying for flavor and appearance instead of for nutriment. This may be justifiable, particularly in the case of illness, or to encourage a flagging appetite; there are times when we must not consider the money value at all. At other times the flavor and appearance may be secured by skilful cooking of cheaper material, and it is worth noting that a pound of rice costs from eight to ten cents, a pound of puffed rice twenty to twenty-seven; the food value the same. Corn meal costs about two and a half cents a pound, corn flakes fourteen cents. Stuffed dates selling at twenty-five cents a jar can be prepared at home for nine cents. No one expects to cater for a family purely on a nutritive basis but the following table of the relative values of some of the staples may suggest possibilities of lowering the food cost by making occasional alterations in the bill-of-fare.

Perhaps in no other department has woman's economy been so severely criticised as in her expenditure for clothing. It sometimes seems that the critics overlook the fact that the feminine fondness for attractive feathers is normal and therefore to be respected. It is easy, however, to make a distinction between attractiveness and display which usually

	One Dollar Will Pay For					
	Price per lb.	Pounds of food material	Nutrients			Fuel value in calories
			Proteiu	Fat	Carbohydrate	
Oatmeal	4 c	25	3.4	1.6	16.6	43830
Cornmeal	2½c	40	3.1	.7	29.6	63770
Flour	2½c	40	3.9	.4	29.4	61940
Bread	5 c	20	1.6	.2	10.4	23760
Cabbage	2½c	40	.5	.1	1.8	4700
Dried beans	5 c	20	3.5	.3	11.6	29350
Apples	1½c	66.7	.2	.2	6.5	13300
Potatoes at 90c bu.	1½c	66.7	1.0	.1	9.3	19680
Milk at 7c qt.	3½c	28.5	.9	1.1	1.4	8850
Butter	25 c	4.1	...	3.2	....	13650
Cheese	16 c	4.1	2.0	2.0	....	7410
Eggs at 36c doz.	24 c	4.2	.4	.4	....	2560
Fish, fresh halibut	18 c	5.6	.8	.2	....	2650
Salt cod	7 c	14.3	2.2	.1	....	4650
Tough meat at 9c	9 c	11.1	1.8	1.0	....	7950
Tender meat at 25c	25 c	4	.6	.6	....	4100

In comparing these values on a nutritive basis we must remember that fat and carbodydrate will supply heat and energy, but only protein will build tissue. Protein will supply heat and energy also, but it is altogether too expensive and too hard on the digestive system to use in sufficient quantities to furnish the body fuel.

has nothing of beauty in it. The woman who carries on her person a fortune in the shape of a fox slung over her shoulder, her arm slipped through the skin of another, and some wonderful bird or the plumes of one tilted on the side of her head cannot look much unlike the primitive squaw carrying home the harvest of her master's hunting. The whole regalia may mean little in the way of beauty or comfort to the wearer, but it represents so many dollars; that is why she wanted it. It is this setting a standard by what other people are doing, this weakness for fashion and imitation that has run away with so much money for dress. Happily the newest fad coming just now is to be old-fashioned, that is, old-fashioned enough to be independent, to try to express some individuality in clothes, to choose a style for a very fine gown that cannot be far out for two or three years to come and that will stand making over if necessary, and lastly, to take pride in the accomplishment of being your own dressmaker.

In buying dry goods, too, we show a pitiable lack of independence when we ask the man behind the counter, "Will it wash?" or "How many yards will it take?" Of course he always assures us that it will wash beautifully, and never advises a scant supply of goods. He may be a laundryman or dressmaker, of course, but it isn't likely; his business is to sell.

Expenditures that Bring the Best Returns

After purchasing the physical necessities, food, clothing and the like, we can consider spending for higher living, or the things relating to the educational and emotional side of life, and herein comes the joy of having saved. The money left to invest in these things brings the biggest returns. The health and education of the family depend to a certain extent upon an occasional holiday trip, a good concert, books, music and all that these things bring; and health and education are better legacies to leave a child than money. The home with its well-worn old-fashioned furniture, but well chosen library and good-toned piano, even though the case be a little damaged, is a better place to live than the house with mahogany chairs and china cabinets where the cultural side of living is not given a place.

And then there are other things more precious than money which women spend and spend pretty recklessly, too.

Another place where the spending of time and effort brings its returns.

With the home-mother, time is generally spent lavishly; effort is seldom given grudgingly. If she sees results ahead she holds nothing back, but experience is a hard teacher when the results prove unworthy of the time and effort spent. This is where the real waste comes in the spending world, not money waste but the waste of time and effort. If it is true that the country is richest which nourishes the greatest number of noble and happy human beings, it is also true that that home is richest which gives the world the noblest and happiest men and women. From this standard there is no comparison between their money cost and the best available protection of health, or the things that make work easier and enable us to give the best of ourselves to the people we live with.

Much has been said about a woman's fondness for spending, but the average woman knows that she derives far more pleasure from saving. Many a woman knows from experience that a family loses one of its strong ties when they no longer have a common object to save for. At first they saved for a new barn, then they saved for a new house, then they saved to send the children to school. And when they had the new barn, and the new house and the children educated, the money seemed to pile up a little, then, worse luck, John went into politics and wasn't around home so much, and the economy that she had worked down to a science wasn't needed any more. That was where the loss came in. So if the state of our finances draws a close spending limit we have the wonderful privilege of saving with an object in view that makes it worth while.

Solvent Farming

Nothing in our present economic condition is more remarkable than the sudden development of soil consciousness, says a writer in *Everybody's Magazine.* Until only a few years ago food had been so cheap in this country that agriculture was the most wretched of industries. It paid handsomely only in virgin areas, for a short time, but there it was not so much agriculture as mining. Then suddenly, just when the natural increase of population was catching up rapidly, an industrial impulse carried hundreds of thousands of men from the fields to factories, and a rise in the food-cost of living was greatly accelerated.

Correction comes automatically. Energy seeks the maximum inducements. Agriculture in this country for the first time offers rewards which make it worth while. Its opportunities are being advertised as formerly industrial opportunities were. Instances of large profits attract the individual. The science of farming is eagerly studied. Young men are beginning to adopt farming as a pursuit, where formerly it was a drudgery from which escape was to be prayed for. In the next generation the American soil will be conserved and coddled as never before; and it will yield the food for a population so much denser than now exists that comparisons are futile. Food never will be so cheap again as it was; it was too cheap. But it need not be dear.

A purely financial deduction is that there is probably no safer investment in this country at the present time than good farm mortgages.

Farming has become a solvent business.

The moment others see that money-grabbing is your dominant passion, then the bud of your nobility perishes.

A King in Poultrydom

A University Graduate and a Schoolmaster Whose Hobby Has Made Him

By HERBERT GRANSFORD

SEVEN years ago John S. Martin, B.A., was teaching classics in the Port Dover High School. He had passed through the University of Toronto some time previously, had put in his year at the School of Pedagogy at Hamilton and had subsequently settled down, as he thought, to an academic life. But unfortunately (or fortunately) for his scheme of existence, Mr. Martin was troubled with a hobby and this hobby grew up by degrees to such proportions that, like the proverbial dog's tail, it presently began to wag the dog.

Mr. Martin's hobby, cultivated and encouraged from early childhood, was chickens. He was simply daft about them and from one variety he had shifted to another variety in search of his ideal, until he had had experience with all the principal breeds. Even when he was at college he could not relinquish his fad and when he took up teaching, it was simply impossible for him to forego it.

The story is told that when he was boarding in Port Dover at the time he first went there to teach, he secured a setting of eggs from which he hatched out thirteen chickens in the back yard of the boarding house. Coming home one night he found the coop overturned and the brood scattered. Apparently it had been the work of some malicious person who objected to having chickens in the neighborhood. Nothing daunted however the enthusiast ordered a second setting of eggs forthwith. But next morning strange to say the original brood were all back clamoring for their breakfast. It transpired subsequently that a lady boarder, to play a joke on Mr. Martin, had hidden the chickens overnight in the closet of her bedroom.

In 1906 the hobby had swelled to such dimensions as to give promise of being able to support the hobbyist instead of sinking him as is so frequently the case. His parents had previously moved to Port Dover, thus giving him an opportunity to carry on his breeding under more satisfactory conditions at home. Here he worked late and early, rising before daybreak and retiring at midnight. School attendance became a nuisance, interfering as it did with a much more congenial task. It looked as if the crisis had come. One thing or the other had to be sacrificed and Mr. Martin decided in favor of his beloved White Wyandottes.

> When the avocation of a busy man becomes more attractive to him than his calling in life, and when he finally forsakes the one for the other, the real life of the man develops under the spur of interested enthusiasm. Chickens perhaps have held more attention from professional men than any other form of live stock, but it falls to the lot of few to become wealthy developing this by-product of their attention. In this case, a graduate of Toronto University in the nineties, a successful high school teacher, and a cultured student, found a more congenial and also a more lucrative diversion near Silver Lake.—Editor.

A University graduate known as the Wyandotte King.

To-day the ex-schoolmaster is heralded as the Wyandotte King of America. That means that he has become the premier breeder of this famous kind of poultry on the North American continent, as he is actually the owner of one of the finest and most extensive poultry farms in the world. He has made money at the game, has become wealthy in short, and owes his fortune solely to his wonderful success with his birds. Imagine, if you can, refusing an offer of a thousand dollars for a certain prize-winning cockerel, known as "Sensation," and then figure if there is not wealth in a colony of twenty-five hundred thoroughbred chickens.

Mr. Martin has now been exhibiting his pets at poultry shows for several years and always with success. He has made seven exhibits at the New York State Fair and out of a possible forty-two first prizes in that time he has secured thirty-six. At the famous Boston Show he carried off the Sweepstake Championship as the owner of the best bird in an exhibit comprising five thousand entries. Last January at the same exhibition his showing of White Wyandottes was the sensation of the day, winning the American White Wyandotte Club ribbons for the best cock, best hen, best cockerel, best pullet and best display.

With such aristocratic stock, there is little need for Mr. Martin to descend to the vulgar business of selling eggs for market. His best eggs are nearly worth their weight in gold and only a millionaire could afford to keep his table supplied with them. They are disposed of for breeding purposes in large quantities. His birds too are mostly too valuable for killing and instead are sold to breeders in all parts of the world. Not long ago a large shipment was sent to Allahabad in India, while orders have been received from South Africa and nearly all the European countries.

The Wyandotte King calls his estate Silver Lake Farm. Silver Lake is a small body of water formed by the widening of the River Lynn and on its sloping shore the farm is situated. The residence fronts the lake. On the side of the hill and sheltered by shrubs and trees are the poultry runs, while dotted all over the fifteen acre farm are the colony houses, fifty in number and all of uni-

On the sloping shores of Silver Lake, where the Martin Poultry grow.

form construction. An interesting feature is an exhibition house, where the birds are shown to intending purchasers. This is really better equipped than many a poultry building at a fall fair, being lighted by natural gas and having accommodation for one hundred and fifty birds in individual cages.

The weary dweller in the city, tired of the strain and confusion of urban existence, turns longing eyes to the Martin farm on the borders of Port Dover. If only everyone who had the desire could accomplish the same results, but unfortunately it requires a certain kind of genius to succeed and evidently Mr. Martin was gifted with this genius at his birth. "Growing really fancy chickens" he once said, "is an art,—a matter of the eye and brain. You must see your ideal in your mind; then you must strive with intelligent effort and patience to attain that ideal." Surely this is a recipe which only a born enthusiast can follow.

With all his striving after prize-winning points of excellence in breeding, Mr. Martin has not overlooked the main object to be gained, viz., the production of strong hens capable of laying plenty of fine eggs. This is the purpose which he has back of all his efforts. He is working for greater egg production and so far as this is combined with exhibition qualities, the two ideals go hand in hand.

To those who may have a desire to follow in his footsteps and take up poultry raising as a business, Mr. Martin would give a word of warning. He did not forsake city life and engage in his present occupation all at once. The transition was slow. Not until he found that he could make a living out of raising chickens did he give up the work by means of which he supported himself. With him it was no uncertain venture.

In Bill Hurst's Shack

A Different Code for the Man who Travels in Hendrick's Class

By CLEMENT BANCROFT and MADGE MACBETH

A story taken from the pigeonholes of personal reminiscences and recast in story form in collaboration with a friend, into this pleasing bit of fiction, will be found intensely entertaining. As interest always attaches to real occurrences in life, so the many grains of truth in this story, will furnish a bright background for the characters of the plot. Much of the cant and fallacy characteristic of everyday lives of North America's splendid race of people, is here exhibited. Yet the whole truth would be stranger than the fiction.—Editor.

A BITTER-COLD unfriendly wind beat slant-wise through a thick fog as though trying to crush it back to earth; it thrashed against the young saplings and shrubs in its endeavor to strip them of their branches as well as their leaves; it spit in the face of the North Wind as though challenging it to send down ice and snow on this last day of September, when not even the bark of a rifle broke the shrouded stillness of the Big Tongue Lake region, in Northern Ontario.

The hunters retreated before the fierce storm and sought out shack and fire; the hunted crept into what shelter they could find, bowing themselves to the gale.

A man pushed his Peterborough through the creaming waters of the Big Tongue River with difficulty. Although he knelt in the centre of the canoe and paddled with the steady stroke of the expert, a gust of wind frequently flung him broadside to the advance of a froth-capped wave, which beat him back as many yards as he had gained in several moments. The fog was so dense he could hardly see the load of provisions tied in oil-cloth heaped both fore and aft. The bank might have been ten yards, or ten miles away.

The man's figure looked like the torso of a giant, rising from his frail barque. He was bronzed and grizzled, water dripped from his bare head; he was dressed in the rough garb of the northern trapper, even on such a day showing an open throat and uncovered forearm. Close inspection would have revealed the fact that his right hand lacked three fingers, none but the thumb and little finger remaining, but his handling of the paddle and the oar was a source of unfailing admiration to the settlers.

The fog closed in until he felt that he was swallowing great chunks of cloth; a sudden gust of wind lifted him high on a wave, then turned him completely round toward Merion which he had left nearly an hour before. Righting the boat at length, he leaned forward straining to pierce the fog for some land or water mark.

"This is the worst ever!" he muttered, yet with the joy of battle in his face. "How I would love to shoot the rapids in such a gale! But if I should capsize—" he glanced over his shoulder at the bundle in the stern," we would lose all the papers and the mail!"

Two strong strokes drove him toward the left bank.

"Bill Hurst's shack ought to be along here, somewhere," he continued. "Suppose I'd better take possession for the night. I'll have a chance to go over the mail, then, any way."

Working along a slanting course, the

man reached the shore, beached his canoe, and after a few false leads, found the shack. Although deserted a year or more, it was water-tight and fairly clean; it contained a few pans and by good fortune several dry logs. The drenched paddler built a roaring fire before transferring his load from the boat to the shack and gathering more fire wood. Then he spread his outer garments to the blaze and settled himself in scant clothing to dry piecemeal, while he read the week-old papers.

The contents from the glaring headlines "DISAPPEARANCE OF YOUNG WOOD," to "continued on page 12," were absorbing. He smiled grimly as his eyes devoured the closely printed lines—once he laughed outright and the sound was eerie in the rain-beaten cabin. It echoed against the rough beams and filtered through the chinks until it mingled with a fast descending night—a night which seemed to sit heavily on the lap of the fog. And before it had really died away, another sound burst chokingly through the loneliness above the shrieking of the wind and the clatter of the rain.

The man in the cabin started to his feet. In another moment he was tearing, still half clad, toward his canoe and the river. Arrived there he paused uncertainly, once more straining every faculty to rend the veil which hung between him and the world beyond.

"For God's sake—save me!"

The scream came from the throat of an abandoned soul, staring into the watery eyes of death. It echoed back from the north.

"Rapids!" cursed the man shoving off.

"Hold on," he bellowed, the muscles of his great throat swelling, "Hold on and keep shouting; I'll get you!"

He struck furiously, recklessly into the churning waves . They washed clear over the thwarts and rolled at the bottom of the boat over his bare legs. The rain felt like tiny balls of burning lead, but he pushed on.

"Where are you?" he called. "Shout!"

A wild scream answered him. Another, and yet another ending in a horrible gurgle. Then no more.

By the eddy, the frequent scrape and jar, and the lashing of the canoe, the man knew he had reached the rapids. He could not see the point of the boat; he had no idea where to turn to find the drowning man. He allowed himself to be whirled this way and that, shouting ceaselessly, with no result. Then, something dashed against the canoe in the bow, bumped along the side and finally was flung with stunning force across the stern.

The man loosed his hold of the paddle and fell backwards, clutching blindly. As his fingers closed on the body, he felt the icy water rise above his head and the boat slip away.

His struggles to reach the shore with his limp and heavy burden would fill many pages; his scant-clad body was cut and bruised in dozen places. Blood from a gash on his head spread over his face and disfigured him, horribly. And he sank exhausted on the shore beside the man he had dragged there at the risk of his own life.

As soon as his breath came back, the huge man picked up his burden, and, guided by the red glow of the fire which showed through the open door, he reached Bill Hurst's shack.

He looked long and curiously at the little man writhing in the agony of seasickness; at his neat pepper and salt clothing of latest cut; at his unostentatious but expensive stick pin and his mauve madras shirt. He looked a long time at the small delicate face, ghastly and blotched by turns as spasms of illness gripped him. And he smiled again the grim smile he had worn while reading the newspapers.

Presently, the little man sat up.

"Where am I?" he asked feebly.

"In Bill Hurst's shack," answered the other, turning away and setting about preparing a meal.

"Ah, yes—I remember! The water—ice-cold and deep; the head wind—the rapids—the rocks!" He shuddered. "You must have saved me from that churning hell. Saved me at the risk of your own life. Words are poor mediums of gratitude, Hurst. Believe, however, that Joshua Woods is always your friend."

He rose shakily and extended a soft, blistered hand. The other man had bound his right forearm with a piece of his shirt and he held out his left with a sort of apology.

"You make too much of the service," he said. "I am a powerful swimmer, and I know every inch of the rapids."

"It was a hero's act, just the same, man—a hero's! Had I met you sooner, the accident would never have happened. Together we could have pushed through to Hendrick's place."

"Hendrick's place? Were you going there?"

"Yes. But for my urgent necessity to see him, I would not have been so foolhardy as to disregard their advice at the station. Although I used to be an expert with the paddle. But you are hurt, man, your face is cut and bleeding!"

"Nothing! Nothing but scratches! If you can collect enough rain water for me to wash in, while I go on with supper, I will be a more presentable object. Smoke?"

"Do you live here, Hurst?" asked Woods presently when they were eating bacon and beans with their fingers and drinking coffee from the tins out of which the beans had been taken.

"Oh no! At least I haven't been here—just here—" he waved a comprehensive hand around—"for many a month. I only came in to-day. But the North country is my home."

"You are a trapper?"

"He leaned forward, straining to pierce the fog for some land or watermark."

"Oh, I just do whatever comes to hand. Have some more coffee?"

After a short silence, Woods asked, "You know Hendricks, I suppose?"

"Oh yes."

"Pretty well liked around here?"

"I've got nothing against him."

There was another long pause during which Hurst turned his guest's garments and rolled himself a cigarette. Woods fidgetted and began again.

"His wife and daughters don't live with him, do they?"

"They're here part of every year; then they go off to Europe or the watering places or somewhere."

"I wonder if he still cares so much," the stranger mused as though oblivious to the other man's presence. Hurst looked at him curiously and chose to consider the remark addressed to him.

"Cares for them?" he repeated. "I should say he cares more for them than his life, or his soul. Why shouldn't he?" "Well, I don't know—they're just girls, you see. Now if he had a son —But what's the use? Have you a son? No? I thought not! Then what does any one know about the way a father cares for his son—unless he has one? He'll never understand! He'll laugh at me—maybe he'll curse me—Here, give me another drop of that bottle! My teeth are beginning to chatter!" "It's getting late and there's a train out in the morning, but I haven't seen John Hendricks. Well, "he broke off suddenly," why don't you talk? The silence is awful! Yet it is better than that screech of the wind—I tell you, I'll go mad, sitting here doing nothing!" His voice rose to a shrill scream.

"What do you want to do?" asked the other, without emotion.

"I want to see John Hendricks, I tell you! Didn't I come all the way up here as fast as steam would carry me just for that? Didn't I wave them aside at Merion when they told me I couldn't make his place on the River a day like this—and start out just the same? Hurst," his voice broke again, into a kind of hysterical sob," I've got to see him and I've got to see him quick!"

Bill Hurst lighted another cigarette dispassionately. After he had it going to his satisfaction, he remarked.

"We could probably make it in a day through the bush if the fog lifts!"

"A day! My God man—in another day my son—may be—"

"Dead?" asked the other, calmly.

The father covered his face with his hands and groaned.

"Can't you talk?" he asked presently. "Haven't you a spark of interest in the man you risked your life to save or a germ of curiosity as to what hell has in store for him by keeping him here these awful hours? Haven't you anything to say?"

"We're not much to chatter, in the woods," answered Hurst. "But if you want to talk—go on. Say what's on your mind; I'll listen."

"Did you know that John Hendricks was a criminal, Hurst?"

"Pshaw! We're all that, mostly. Have you lived straight, according to what you think is a Christian life, Mr. Woods?"

The little man bit into his pipe stem.

"We all make mistakes," he muttered.

"Sure, and we're all criminals, too."

"You are right—in a way, Hurst — you are right. But at least I can say that I did not deliberately commit a crime, knowing that I was liable to—"

"Oh, I see what you mean!" The man's eyes were closed at the corners, his lips were drawn down and his voice had an insolent ring. "You mean that you lived 'within the law' so that its tentacles could not reach you; you were probably 'our respected citizen,' and a Church-warden; you underpaid your servants and your workers; you overlooked the proper housing and feeding of them; you squeezed your best friend when it came time to foreclose the mortgage and you likely stinted your family when they might have had plenty. But you would put a costly monument on their graves or found something or even put a window in a church. Sure, you're no criminal, Mr. Woods. You live a Christian life."

"I wasn't introspective—I never looked inside, to see how wrong I was; I just went on," said Woods. "But Hendricks—"

"Well, what of Hendricks?"

"Why, he robbed our bank!"

"And got away with it—or have you come here to arrest him and take him back to justice?"

The irony of the tone jarred, but Woods answered simply,

"This was twenty years ago. I had known him since he was a little barefoot shaver running around town. He got a job in one of my mills when he was about ten years old, but had some of the fingers of his right hand cut off, then he wasn't much use to us anymore. Later—he was sixteen or so, he came into my office asking for a position in the Bank. We happened to need a boy and took on Hendricks. I was elected to the Senate and did not see him for ten years. He came into my office again and asked for a raise.

"I've been with the First National ten years, Senator," he said. "Ten monotonous, life-sapping years. I am now teller at a salary of sixty-five dollars a month. I am married and have two little girls who, many a time, have not enough to eat and wear. My wife is an invalid and it costs money to be ill, Senator. The doctors are good; they do not press me very hard, but I need more money."

"I answered him then as I would now. Men have no right to marry until they have sufficient incomes. I did not."

"Avoiding his mistakes—and criminality, I judge," suggested Hurst.

"I merely mentioned that to show you that I did not preach what I could not or would not practice."

"So you refused him more money?"

"Yes. And things went on as before for several months. Occasionally, I made a half resolution to institute a salary limit as to marriage in the Bank, such as you have in your Canadian institutions, but other matters drove it from my mind until one morning when I found a letter addressed to the Directors on the Board table. It was from Hendricks asking for a raise. He wanted one hundred dollars a month.

"Some were not adverse to giving it to him. I opposed them. My business training first and foremost urged me to get the best results for the least expenditure of money. I was pretty certain that Hendricks would not leave the Bank if we refused him, and if he did, well, there were other tellers. We sent for him and I told him of our refusal to consider his request. I also told him, he was at liberty to sever his connection with us, if he thought he could do better, and that we wished him well. I remember that he staggered from the room.

"One of his children is not expected to live," said the Vice-President.

"Had I known that I would have offered to help him," I said. "Perhaps even now—"

"You would have dispensed charity, Mr. Woods?" Hurst broke in. "You would not raise his salary, but would saddle him with an extra burden—that of obligation. But I interrupted you."

"That was on Friday. On Saturday, Hendricks left town returning earlier than usual to the Bank on Monday morning. He called up the cashier and asked him to come straight down.

"Mr. Thorne hurried to the Bank and was told that the vaults had been robbed. There was only about three thousand dollars remaining from the three hundred thousand which was placed there at noon on Saturday.

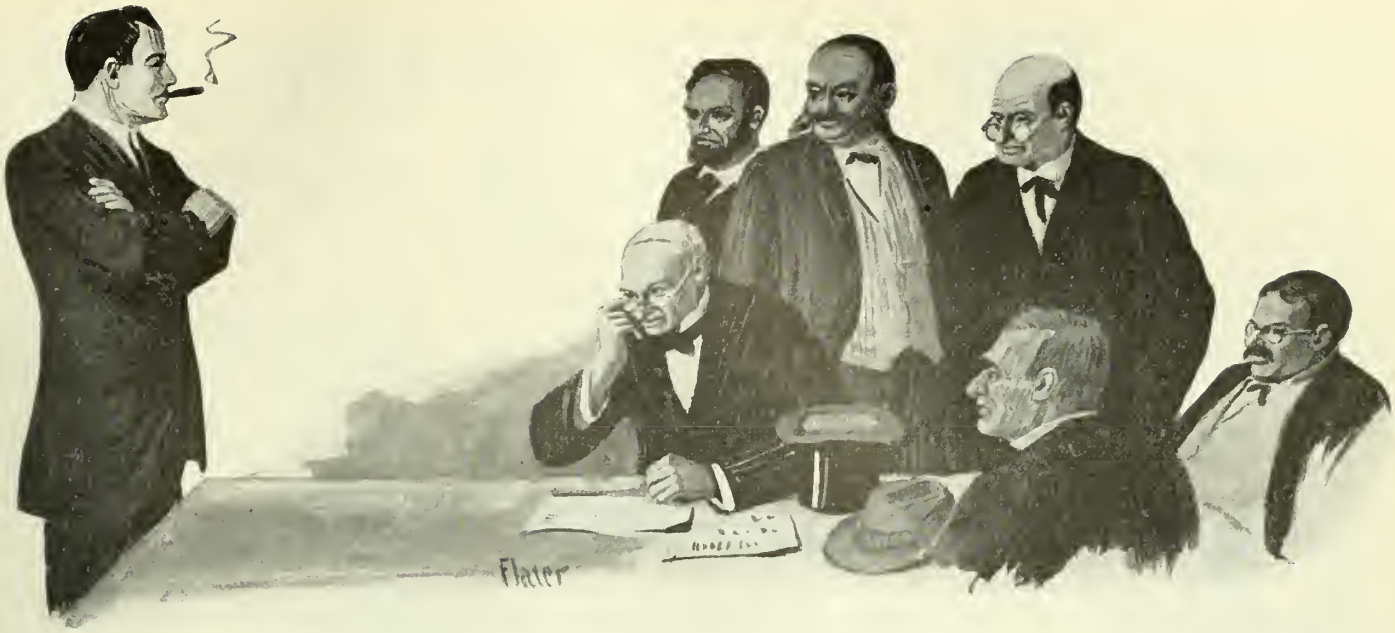
"Who could have taken it?" gasped Thorne.

"I did," said Hendricks, coolly.

"The cashier thought him mad until he urged him to telephone the Directors to come at once to the Bank. We assembled excitedly and somewhat like bewildered children, did what we were told. Hendricks was locked in his cage paying out money as though nothing had happened. Our personal cheques tided us over the day.

"At noon we sent for Hendricks. I remember thinking what a difference between this man and the beaten creature who staggered out of our presence some days ago He took up his position before the fire-place and addressed us.

"Gentlemen,' he said, "I see that you are thirsting for my blood. As you please, of course. But I ask you to consider our respective positions first. On Saturday at noon, I took from the vaults approximately three hundred thousand dollars. It is now out of the country; you may believe me implicitly when I tell you that you will never see it again. The rational thing is, naturally, to have me arrested and brought to trial, in which case the whole affair will be made public. I will be sentenced to about ten years in the penitentiary, counting off three for good conduct. Dreadful disgrace, you may think, but no sort of punishment, I assure you, when I will have the ever-present consolation of knowing that my family lives in comfort, even luxury.



"The drawn, angry faces of the directors, the easy, almost insolent, manner of the teller."

"In the meantime, what of the First National? During my trial, I shall not scruple to place the blame of my crime where it belongs—had I been given a decent living wage I should have asked nothing further. I shall bring out several penurious methods of the Bank as an institution and you will not find trustworthy men as plentiful as formerly at the same meagre salaries you have paid. Added to that, the publicity of the affair will have the effect of making people somewhat suspicious of a Bank which cannot safeguard public interests any better than to allow the entire capital, one might say, to be stolen and carried into Canada. Depositors will come to the conclusion that the First National is not the place for their money, and you will have to close your doors. Now, gentlemen, I have a proposition to offer you—I agree to restore to you one half of that three hundred thousand dollars if you will all sign a paper promising not to prosecute me, and I will say nothing about the transaction.

"I will give you twenty minutes in which to arrive at a decision. At the end of that time, if you have not come to a unanimous conclusion, I will hand myself over to the police!"

"Swayed by the advice of our Vice-President who had been impressed by Hendricks' argument, we again sent for him and said we were prepared to sign. He had an agreement all ready, one copy for himself and one for us. Our hands shook a little as we affixed our signature, but he was never steadier.

"Now, gentlemen," he remarked as he folded his paper and put it into his pocket, "by signing this agreement, you have, one and all, made yourselves liable to fifteen years imprisonment—for condoning a felony. But have no fear from me—" he hurriedly assured us. "I think we may consider the incident closed. Good morning."

That was the last we saw of him for ten years.

"You got your half?" asked Bill Hurst.

"We got the whole amount—with interest," Woods said. "John is a wealthy man to-day. He bought about a third of one of your most promising Western towns, besides striking it rich in Larose and Nipissing and a dozen other deals."

"Well, what has all this to do with you, now?" asked Hurst interested at last. "You have your money. Are you going after your pound of flesh as well?"

"It has to do with my son—my only son," he lingered over the words.

"I tried to bring Horace up in the fear of God, to make him see the wickedness consequent upon a lavish and unwise expenditure of money. I kept him on a small allowance, so that he would not feel richer than other young men about the town. But his mother could not see it that way. She spoiled him and taught him luxurious habits. She used to help him out of debt without my knowledge until the allowance I provided for her would not cover Horace's needs. He spent a great deal of money going about after a girl," faltered the father.

"A girl—what girl?" asked Hurst, sharply.

"His daughter—Hendrick's daughter. He followed her all over Europe, trying to live as the Hendricks lived. I don't know whether she cares for him or not. .....Horace was in the Bank..... he was teller and had a large salary....more than sufficient for his needs and moderate pleasures, but .... when he travelled in the Hendrick's class—well, Hurst, he robbed us—my son robbed the Bank...."

"So you called him into the Board Room and cried for his blood as you did the other, I suppose, before clapping him in irons," suggested the man.

"My son—in irons—my son?" shrieked Woods, starting to his feet.

"Why not?" asked Hurst calmly. "Didn't he steal, when by your own admission he had plenty for his needs? Wasn't his crime greater than the other man's?"

"He was lured, I tell you," groaned Woods, between his hands. "He never would have done it—"

"How much did he steal?" The ugly word was brought out with brutal harshness and Woods winced.

"All told he has taken three quarters of a million. This has been going on for years. No one knows it but me.

"Where is he?"

The father shook his head.

"Heaven knows. He's hiding, or else —Hendricks found out and has him cornered somewhere, torturing him. I must find my boy—I must protect him—I must see Hendricks and grovel in the dust asking his mercy—"

"Why should Hendricks care?"

"Didn't I just tell you that he and his cursed capital control the First National to-day? It is he who will send my boy to the penitentiary."

Hurst smoked on without speaking and presently a heavy silence settled in the little shack, when from utter exhaustion, the stranger slept. Then the huge man lifted Woods gently and laid him on the rough bed, covering him with his own clothing and watching the play of the fire on his drawn features all through the night. Again and again the silence would be broken by cries for mercy, by pleading with a harsh and revengeful Hendricks, or by an appeal to Horace himself.

Early in the morning, there was a sound of crashing through the sodden bush, and through the fog which still clung over the world, a man's figure burst into the shack.

"Thank God you are here! I thought you were lost—I sat up all night watching for you—the river was impossible. and I was afraid, sir—" he broke off abruptly. "I've had a hell of a night," he said passing his hand over his head.

The little man in the bunk stirred and moaned. ———nowhere to go," he muttered.

A look of stupefaction came into the young man's eyes as he crossed the room and looked down at the sleeping figure. "Mr. Hendricks," he whispered, "tell me, in God's name, how did Dad get here?"

The Love of Life

Nat Husky and the Man Who Had Made His Pile

By H. MORTIMER BATTEN

The unknown vicissitudes that mark the lives of those daring adventurers into the unexplored regions of Canada's Northern areas would form more tragic reading, could they be written, than the creations of fiction-writers. Those who follow with interest the part that is being taken by Canadians in Hudson's Bay and the Polar Continent investigations, will thoroughly enjoy this story of an Alaskan gold-fields incident, told by a writer who has spent some years amid the scenes he describes.—Editor.

EARLE CROSSLAND called his team to a standstill at the river margin below the hotel, and leaving the dogs to the care of his Indian pilot he toiled up the incline. At the door of the hotel he kicked off his snowshoes and went in, slamming the door behind him to keep out the bitter night air.

The bar tender greeted him cordially. "You an Englishman on the trail at Christmas time!" he added, with mock surprise. "Where you for, anyway?"

"Going right out to Holy Cross," Earle Crossland answered. He was a young man, fair-haired and broad of figure. His face was distinctly southern, and from his frank expression and upright bearing he was a man to be trusted.

"What, going out of the Yukon for good?"

"Sure," answered Crossland. "I've more sense than to stay on after I've made my pile. Sold out my Pup claims last month for five hundred thousand. Say——" he added, dropping his voice almost to a whisper, "who's that poor swipe crouching by the stove?'

He inclined his head towards the third occupant of the room, who sat huddled in a corner out of the direct light of the lamp. Though the man sat in the shadow one could see, by the dark, cadaverous eyes and general wolfish appearance, that he was about on his last legs. His untidy clothing fitted loosely over his bony frame, and his left hand, which now supported his forehead, was minus two fingers and a thumb.

"That's Nat Husky," answered the bar tender. "One of the first in at this country. He ain't worth much to-day."

Earle Crossland regarded the man in silence for some seconds, then he said—"Poor beggar! He's about finished. if I'm any judge of man flesh."

"Pretty near," agreed the bar tender. "Dead broke, dead hopeless and dead sick. It's all right—he won't hear us. Got caught in a blizzard two winters back — lost his fingers and was stone deaf when they found him. He's never properly recovered his hearing. The cold got in his lungs, and he's suffered with a bad cough ever since. He's just mad to get home, but simply can't rake up the dubbs. manages to scrat' along by chopping cordwood for the steamers. Listen!"

A dry, choking cough sounded from the dark corner of the room. The crouching man gripped his chest, while the cough shook his frame from head to foot.

"Poor beggar!" repeated Crossland, his voice soft with the sympathy of a strong man for one whom life had endowed less liberally "One meets them all up and down the river — his sort. They come into this country with high hopes and high ambitions—as fit as you and me. Then the cold gets them, and breaks them up in a single night. I tell you, we who get out with a pile ought to be mighty thankful."

The bar tender nodded. "It's simply a toss of the dice," he agreed. "You're one of the lucky ones who've struck it rich. He's one of the unlucky ones, but it isn't because he hasn't tried. Say, what can I get you down?"

"This is my move. Hand me one of those demijohns, and while I'm at it I'll stand Nat Husky four square meals, anyway. Here's enough to buy him a new parki—tell him to get one with a hood. A man can stand this climate o.k. when he's properly clothed and fed, but when he's not, and sick into the bargain, God help him."

Earle Crossland drew out a huge wad of ten dollar bills, and threw the required amount on the counter. He did not see that Nat Husky had looked up, and was watching him closely. He did not see the lustful gleam that came suddenly into the crippled man's eyes as carelessly he re-folded the bills and thrust them back under his parki.

With an effort Nat Husky controlled himself. He rose slowly to his feet, and without looking in the direction of the counter shuffled to the door. The bar tender called him, but he did not hear. "He'll be back soon," said the latter. "I will tell him soon as you're gone."

Nat Husky hurried down the main avenue of the tiny camp as though with some fixed goal in view. At the door of his own shanty he slipped on his snowshoes, and took down his rifle from its place under the eaves.

A new light was in his eyes; fresh strength seemed to possess his limbs as he hurried back towards the hotel. His fingers clutched at the hem of his parki, like the fingers of a drowning man struggling for support. He reached the window—saw Earle Crossland gulp down his drink and take up the demijohn. Then he stepped back into the shadows and waited.

Earle Crossland did not see the dark figure huddled against the wall as cautiously he chose his steps down the steep bluff to the river. The Indian had unharnessed the dogs for a roll in the snow, but in five minutes everything was ready for the trail again.

It was scarcely three o'clock, though the darkness of the Arctic winter was upon the land. It was intensely cold, though no snow was falling. The Indian went ahead to look out for blowholes; Crossland took his place beside the team.

"Mush! Hi! Mush on, there!"

The dogs strained at the harness. Crossland gave the sled a heave to break its grip of the ice. The team surged forward.

"Gee!" muttered Crossland, as the keen air met his face. "We make camp if it gets any colder. It's suicide travelling weather like this. Frost gets into one's lungs—freezes the edge of the tissues. Then follows a dry cough, like that poor beggar away back in the saloon.'

The dogs were fit and needed no urging. The outfit was clearly that of a man who had made good, and was not averse to showing it. The trail could not have been in better shape. The ice was swept clear by a recent hurricane, so that the runners vibrated over it with a soft purr. Just ahead the dark figure of the Indian was dimly discernible.

Crossland found himself meditating upon the case of Nat Husky. To-morrow was Christmas Day—a nice Christmas for him Crossland felt some satisfaction in the knowledge that the poor wretch would not, at any rate, endure the mortification of tightening his belt for the festive season.

Ahead of them the grey loneliness; on either side scowling uplands of spruce and balsam. A tense silence reigned everywhere, rendered more significant by the steady panting of the malamutes and the grinding of the runners. The men themselves made no sound as their moccasined feet met the ice. So clear was the going that they had cast their snowshoes. Each moved like a ghost over the white expanse. Crystals of ice clung to their clothing, giving them a spectral appearance. So intense was the cold that it seemed part of the silence pressing in upon them.

Crossland was suffering from an obsession, in which a hungry, wolfish face peered up at him from the uncertain dimness. Once he laughed aloud. It was not like him to become morbid, yet

like all men, he often thought strange thoughts when upon the trail. To-night, Christmas Eve, he was hitting out of the Yukon with five hundred thousand to his credit.

But there were others less fortunate—others whom the northland had crushed under. Again he fancied he heard the dry, racking cough he had heard in the saloon. It came from the grey expanse behind the sled. Fancy, of course; his imagination was playing tricks with him, yet so strong was the conviction that he fell to the rear of the team, shouting to the dogs to keep them moving. But ten minutes later he was back in his old place.

legs, whining their anticipation. He fed them in turn, clubbing those aside that came for a second share. The task completed he was about to return to the sled when again he heard that dry, racking cough.

It was not imagination this time. The sound came from behind him, not a dozen paces away. He froze in his track, motionless as a statute, and without looking round weighed up the situation.

"You best hold up your mits, Earle Crossland. I got you covered."

Crossland did so. Slowly he turned till he could see the dark figure of his opponent standing behind him. The man held a rifle, the barrel of which was

closely, as though to weigh up the man's intentions by sheer power of will. "Yep," he said, with quiet significance. "I should just fancy so. But what if I refuse?"

"You won't refuse, Earle Crossland. You know I'm a desperate man. You may be in an almighty hurry to get out yourself, but you're not in half the hurry I am. I'm going out right now by the overland route with your outfit, and you better hand over that wad p.d.q. If you hesitate I'll kill you."

Crossland did not move. He was used to weighing up his fellow men at a glance, and something in his opponent's eyes helped him. He saw too that the

"Once, twice, his mittened fingers trembled on the trigger."

Promptly at six o'clock the team was called to a halt, and preparations made for camp. To the Indian fell the duty of collecting firewood, but at this particular spot timber was scarce. The pilot donned his snowshoes, and began to toil up the bluff towards the timber belt.

Crossland unfastened the sled lashings, and drew out the dog meat. As he did so the aurora flamed out across the sky in a mad multitude of colored lights. It lit up the whole white scene with its ghostly light.

The dogs surged round Crossland's

trained upon his chest. Nat Husky stepped forward till they could see each other's face quite distinctly.

"What's your game, anyway" Crossland enquired. "What did you come sneaking after me for? You've been following me ever since we left the baseline. I've heard you."

"Then why didn't you turn back and hold me up before I got the drop on you?" sneered the other. "Now hand over that wad of bills you took out in the saloon, then hike back the way you came, and leave me the outfit.'

Crossland was studying his opponent

end of the rifle pointed this way and that as the poor wretch holding it shivered with cold and fatigue. Boldly he took a step forward.

"You know what it means to shoot a man, Nat Husky, as well as I do," he hissed between clenched teeth. "You'd have the mounted police after you within ten hours. They'd hound you across the mountains, and a poor broken wretch like you wouldn't stand a lame dog's chance. They'd get you before you crossed the barren lands, then you'd be marched back to Dawson and hanged."

"No they wouldn't," answered Nat

Husky. "I'm not such an all-fired fool as to take the Dawson and White Horse Road. I know of another way by Stewart and Selwyn, but I'm not going to stand here talking till the cold gets me. I know your game."

He raised the rifle threateningly, but Crossland never flinched. "And I yours," he answered quietly. "Do you know what I'm going to do? I'm going to walk right over to that sled, and get the rifle. You won't shoot me because you daren't."

He turned his back and walked away towards the sled. The man with the rifle stood watching him go, his eyes trained upon the sights with fierce intentness. Once, twice, his mittened fingers trembled on the trigger, but even as he did so the sights wandered from their mark.

Crossland unfastened the lashings, and took the rifle from beneath them. He turned, a broad, stalwart figure, and looked across at his opponent. Now that they were both armed the comparison between them was ludicrous.

"Now you poor fool!" cried Crossland. "Put down that gun before it goes off accidentally and kicks you over."

Nat Husky obeyed, and as he did so what little dignity he had hitherto possessed slipped from him. His shoulders dropped; he shuffled his way to the sled like one drunken and collapsed upon it, his face between his hands.

Crossland picked up the man's rifle and hurled it ricochetting across the ice into the darkness. Then he unrolled the sleeping bags, and taking one for himself tossed the other to his companion.

"You hopeless clown," he muttered contemptuously. "What on earth possessed you to do a fool trick like that? You might have known you hadn't the grit to see it through."

Nat Husky looked up, his eyes aflame with hatred. "Grit," he repeated. "Who are you to talk to me about grit? Three years ago you came into the Yukon and struck it rich nearly your first trip. You didn't come by the overland road same as I did—ten years ago, when we passed whole outfits frozen stiff on the way! They were strong men many of them — men with grit!—but they didn't all pull through. You came in by passenger boat, and when you staked your claim you took an Indian with you to break trail. Look at me!" He leapt to his feet, his face ghastly by the light of the aurora—"I didn't lose those fingers hanging on to a gee pole while an Indian broke trail. I lost them groping across a lake when I was deaf and blind and knew that to lie down meant death. I didn't develop that cough, which made you shudder, riding down the Yukon on a passenger boat. No, you can call me a poor fool to-day because you're the better man, but you wouldn't have called me a poor fool three years ago." He stooped down, his lips almost to Crossland's ears. "Hell's full of men who've made their pile," he muttered, "but I guess there aren't so many there who went out on the overland trail."

Just then the Indian appeared with firewood, and looked at the two curiously. "Take out that sugared bacon and caribou meat," Crossland ordered in the native tongue. "It's Christmas Eve." Then he turned to Nat Husky. "All of which is by the way," he said coolly. "I've had all the good luck and you the bad. Well I'm sorry for you, but it don't explain in the least why you tried to hold me up."

Nat Husky looked at him keenly. The eyes that met his own were those of a man with a white man's soul. They were the eyes of a man who could feel and understand.

"Because I wanted to get out," he said quickly.

"And you thought you could bluff me?"

"Yes. It was a gamble of course, and your luck held good. I wanted to get out mighty badly."

"A wife and kiddies?"

"Yep."

"God help them."

Nat Husky spoke with an effort. "Ten years is a long time," he said. "I came into this country with high hopes, like many another misguided fool. I thought it was only a matter of a year or two, but it didn't come off. Still I had confidence in the future—another summer, then another. To-night I was near mad, and I thought I saw my chance. Time was beginning to press, and I wanted to see them again—"

He patted his chest, and Crossland scowled as again he heard that racking cough.

"And they're waiting for you?" he asked.

"Yes. They don't know. I haven't the pluck to tell them. They'd sell up hearth and home to buy me out. But there's the boy. He was only a little fellow when I left—God bless him! He's thirteen to-morrow — Christmas Day. Heaven knows there's little enough for them as it is."

Earle Crossland rose to his feet and strode away into the gloom. The cold was less intense; the aurora had sunk exhausted into the north. He stamped his feet to quicken circulation; his gaze was fixed on the distant skyline.

The overland trail! Ten years! He pondered over it, and as he did so it was as though ten fruitless years poured their bitter contents into his own youthful cup of life. He felt the pinch of loneliness which burns deep into the souls of those who tread the northland too long; he groped his way through whirling blizzards, fighting, struggling for that which many gained so easily. Then the scene changed; he saw a neat fireside—a woman, children. The sunlight fell in squares on the floor; flowers peeped in at the window.

Life! Life! It was for this men toiled and suffered — Lord, if they could only realize! He looked around him at the dead expanse of winter. The fire flickering on the snow was the only sign of life. He retraced his steps to it; his face was the face of a man who had felt and understood.

"You won't kick me when I'm down" muttered Nat Husky, gripping his companion's arm with crooked fingers. "I might win through yet. Have you a wife or boy?"

Crossland shook his head. "No," he answered quietly. "Perhaps you are better off than I am. There was a woman once—before I came into this infernal region — but never mind. I won't kick you when you're down."

They ate supper in silence, each man fishing his share out of the pan before it froze. When the meal was over Crossland lit his pipe and was the first to speak.

"Ever done any farming?" he enquired. It was clear whom he addressed. The Indian knew no other tongue than his own. Nat Husky nodded.

"I've a bit of a ranch I used to run in B.C. before I came up here," Crossland went on. "I was thinking of selling it but I aren't keen, because I think the value will go up. I'd rather hang on and put someone in to make it pay. Care to take the job? It's a good place for lungers up there in the hills, and that boy of yours can help."

But Nat Husky only stared at him with dazed wonderment.

"You see, I've made my pile and can afford a hobby or two," Earle Crossland pursued. "We'll buy another team from the Indians, then you can ride. I tell you, you'll last for years when you get out of this climate."

The music of the travelling runners on the frost bound snow trail, was the best Christmas music, Earle Crossland had ever listened to.

Largest Apple in the World

Grown in the West of England

The largest and heaviest apple ever grown in the world has been raised this season in England. It is a Gloria Mundi, and was produced by the same growers who three seasons ago raised the famous giant apple of the same variety, which measured 26 inches in circumference, and weighed 27 ounces. Sent to Messrs. Garcia, Jacobs and Co., for sale by public auction in Covent Garden Market on October 19th, 1909, it realized the astounding price of $70, breaking all records easily in every respect. The proceeds of that sale were presented to Charing Cross Hospital by Sampson Morgan of Sevenoaks, who has secured the new comer as well. It is much larger than the other specimen referred to. It weighs no less than 32 ounces, and the announcement of its advent has created quite a sensation in the fruit world. This wonderful apple was grown in an eleven-inch flower pot, the tree producing six mammoth fruits at the same time. It was this very tree which bore the giant apple of 1909. Coupling the advent of these monster apples with the fact that this season in a plantation in the South of England there were hundreds of trees carrying over ten bushels of immense apples per tree—equal to over 800 bushels to the acre—it looks as if commercial fruit culture was proving a veritable gold mine.

Home-size and Man-size

Influence of Physical Environments upon Inherited Qualities

TALL races will naturally build for themselves larger dwellings than short races. But you would hardly expect the size of the dwelling to have a reaction upon the size of its occupants, would you? Yet according to *The Independent* there is apparently a profound connection between the size of the dwelling and the physical dimensions of the children who come out of it. Material for comparison is furnished by a special investigation made for the educational authorities of the Liverpool County Council, and by studies made in a number of "Garden Cities" in England.

The city garden of Bournville was established by the owners of the famous Cadbury chocolate works in Birmingham, not far from the city. A similar garden city "Port Sunlight," was founded by Lever Brothers, soap manufacturers. The children of Port Sunlight were compared with those of Liverpool, and the children of Bournville with those of Birmingham. The measurements were made by physicians, and the populations are comparable because the two model villages were populated by workers and their families taken directly from the cities.

Measurements of 11-year-old boys:—

	Birmingham	Bournville
Average height	4 ft. 2 in.	4 ft. 9 in.
Average weight	53 lbs.	69 lbs.

The average chest measurement of the Bournville boys was three inches greater than that of the Birmingham boys.

Measurement of 14-year-old children:

	Liverpool	Port Sunlight
Average height	4 ft. 4.2 in.	5 ft. 2 in.
Average weight	71.1 lbs.	108 lbs.

Not only do the inhabitants of the crowded tenements differ from those of the model homes in their bodily dimensions; they differ also in the same sense when we consider the length of the life. The reduction in the mortality on removal of a tenement population to a model village is almost incredible. The city of Birmingham, from which the poulation of Bournville was drawn, has an annual death rate of about 17.9 per thousand; the death rate of Bournville for the same period of six years was only 7.5. The infant death rate shows parallel differences; in the city it was 170 per thousand. in the garden suburb it was 78.8 per thousand.

The relation of the size of the home to the size of the children was first brought out in a striking way by Dr. Leslie Mackenzie of Glasgow, who had all the public school children of that city examined, and classified them according to the size of home in which the families dwelt—that is whether they lived in one room, two rooms, three rooms or four rooms. The boys and girls were reported separately, and the large numbers involved (5922 in the

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smallest group) precludes the interpretation of coincidence:—

	1-room homes	2-room homes	3-room homes	4-room homes
Total number of children	5,922	43,100	17,648	7,188
Percentage in each group	8.1	57.8	24.2	9.39
Av. height, inches—				
Boys	46.6	48.1	50.0	51.3
Girls	46.3	47.8	49.6	51.6
Av. weight, lbs.—				
Boys	52.6	56.1	60.6	64.3
Girls	51.5	54.8	59.4	65.5

The medical officer of Finsbury in London has made a similar comparison of death rates for four years with the following results:—

	1-room families	2-room families	3-room families	4-room families
Annual deaths per 1,000	32.39	22	11.14	6.4

Whatever we may believe about the inheritance of determiners for size or weight or longevity, we cannot overlook the tremendous influence of the physical environment upon the manifestation of the inherited qualities. We shall never know what the physical or intellectual capacities of a population are until we shall have established some standard conditions under which the children may grow up free to show all that is in them.

Squab Raising in British Columbia

By E. B. B. REESOR

I HAD promised to look into poultry raising as a business for women when in British Columbia this summer and visited several chicken ranches and runs of greater and less pretentions, but, instead of being impressed with the profitableness of ducks and chickens, my keenest interest centred always in Squabs.

I am told that squabs are the purest form of meat. They are fed from the mouth of the mother pigeon, and pigeons eat neither meat nor grease in any shape or form.

They mature in about four weeks, sometimes a few days over, and are marketed right from the nest, and there is neither hard bone nor tough muscle about them. Squab production goes on all winter long and well mated and good breeding pigeons will produce from seven to nine pair of squabs each year. They require very little attention. They do not like to be bothered when setting. If tobacco stems are to be had the pigeons make their nests from it, and, with water at hand, keep themselves quite free of insects. The squab plants are all under cover, and production goes on steadily when the highest prices can be had.

I found good prices could always be obtained from clubs and high-priced hotels. A pound squab is equal to a pound and a half or even a two pound broiler or duckling for there is less waste.

Squab growers are turning their attention to the raising of larger pigeons, and some, even now, have parent birds that weigh five pounds. This means that as tender and young a squab will weigh from one and a half to two pounds.

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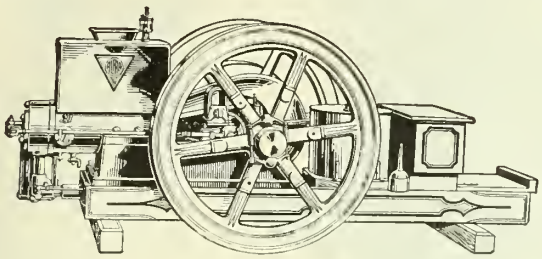

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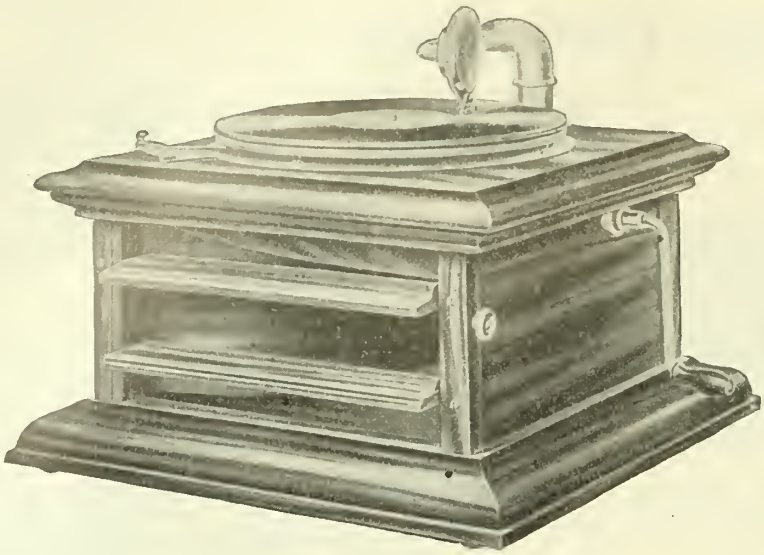

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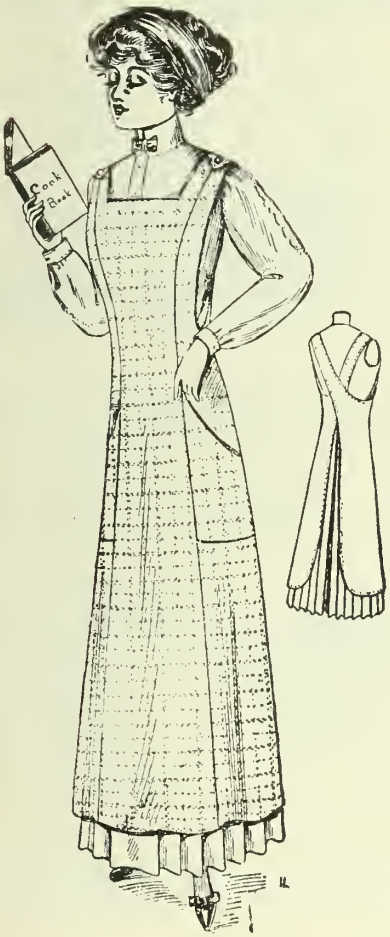
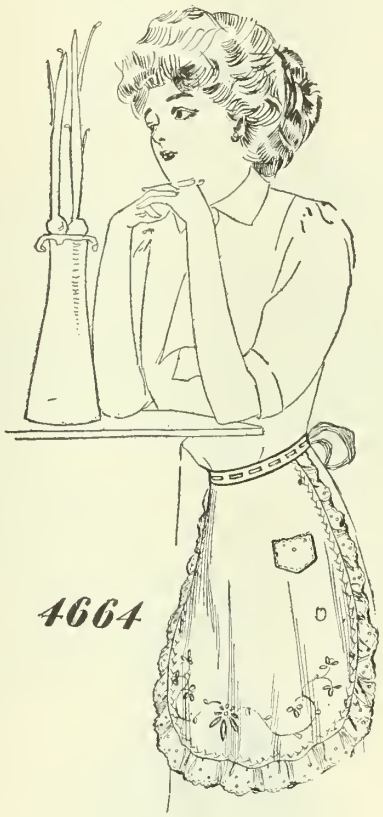


5292---LADIES' APRON

Linen, gingham or seersucker can be used for this apron. It is made with a pocket on each side, and the neck is cut square. The apron fastens with straps at the shoulders. The pattern, No. 5292, is cut in sizes 32, 36, 40 and 44 inches bust measure. Medium size requires 3¾ yards of 36-inch material. Price of pattern 10 cents.



4664---LADIES' APRON

Muslin, lawn or linen can be used to make this apron with the trimming of beading and hand embroidery. The apron is made with a circular ruffle and has a pocket at the right side of the front. The pattern, No. 4664, is cut in one size and requires 1⅝ yards of 22-inch material ¾-yard of beading and 1¾ yards of ribbon. Price of pattern 10 cents.

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WE DO PERFECT WORK

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We do the work quickly at small cost and guarantee satisfaction.

Mail orders receive prompt attention. Send for our booklet, very useful. Dressmakers and others will find our assistance valuable as well as saving of both time and trouble.

Write for free booklet and particulars now.

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A free present coupon is given with each package, which will help you sell them on sight.

Don't delay. Order now and have this Pendant before the other girls in your neighborhood see this advertisement. Address

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We have gingham work aprons already made up at 35c each.

We carry everything for home and personal use.

Send for our free list of fancy work novelties.

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276 Broadview Avenue - Toronto, Ontario

Buy St. Lawrence Sugar in original packages. Untouched from refinery to your cupboard, you are sure of sugar absolutely free from contamination or impurities of any kind.

St. Lawrence granulated white pure cane sugar is packed in three sizes of grain—fine, medium and coarse, in 100 lb., 25 lb. and 20 lb. sealed bags and 5 lb. and 2 lb. cartons.

All first class dealers can supply it so insist upon having St. Lawrence Sugar.

ST. LAWRENCE SUGAR REFINERIES LIMITED, MONTREAL.

25-10-13

5687—GIRLS DOLL'S SET OF ONE-PIECE CLOTHES

This set of doll clothes will delight any little girl as the outfit contains eleven pieces and consists of a double-breasted box coat, jumper dress, guimpe and petticoat in one, combination underwaist and drawers, night gown and cap.

The pattern, No. 5687, is cut in sizes for dolls measuring from 14 to 26 inches long from crown to sole. To make the set for a 26-inch doll will require 1 yard of 40-inch material for the coat, 1 yard of 22-inch fabric for the dress, 1 yard of 27-inch wide for guimpe and petticoat, ¾-yard of 36-inch material for underwaist and drawers, 1¼ yards of 27-inch material for nightgown and 1 yard of 20-inch goods for cap. Price of pattern 15 cents.

6397—LADIES' WAIST

Linen, madras or China silk can be used to make this waist. The waist can be made with or without the box-plait at the front and with either the long or short sleeves. The pattern, No. 6397, is cut in sizes 34 to 42 inches bust measure. Size 36 requires 2⅞ yards of 36-inch material or 2¼ yards of 44-inch. Price of pattern 15 cents.

FREE TO EVERY BOY AND GIRL

This ring is an exact duplicate of an 18k solid gold ring and you can have it engraved with any monogram desired. You can earn this beautiful ring in less than an hour. Just simply sell 24 packages of our assorted picture post cards. Each package contains 6 cards, which you sell for only 10c. *A free coupon given with each package,* will make your friends buy them on sight. Don't wait a minute, but order right now. You send no money until you have sold the cards, then send us the money you have received ($2.40), we send you this ring, engraved, by return mail. Ask for our big catalog of premiums. Address

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The Light That Pays For Itself! Cheaper than gas, electricity, **Kerosene.** No other equals it. All lamps supplied from one pressure tank, inside or outside house. Anyone can install it. **Gravity Lamps Also.** Get catalog, terms to agents, and details of Premium Offer: **BEAUTIFUL EASTMAN KODAK (No. 3 Premo Junior, Photos 3¼ x 4¼) FREE to Purchaser of 6 Lamps in 1 year.**

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Why not make last Winter's cloths look like new?

Bull Dog Brand Dyes

will do this for you with little or no trouble at home, and at a cost that will surprise you.

Send 10 cents telling us the shade you want your dress, suit or other clothing and the orig'nal shade and we will send you post paid a full sized package.

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SUPERFLUOUS HAIR OR TOUGHEST BEARD on face, neck and arms INSTANTLY REMOVED and totally destroying the roots without pain or injury to the most delicate skin, which at the same time becomes bleached, soft and velvety, with the preparation called RAZORINE by Dr. Simon, Paris, France.

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for its failure, and we are not afraid to have you try it free. If you will send 10 cents to cover cost of mailing and packing, we will send you a sample sufficient to remove considerable hair and prove its value by personal test. TRY IT. Price of complete treatment, $1.00. Address

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AGENTS

New startling invention: Combination sunlight burner and wick feed; turns kerosene illumination into brilliant gas light; rivals electricity; saves oil; no mantles to break; makes bright, white, smokeless light 3 times larger than any other burner; every home buys several; $5 a day easily made; 100% profit; agent's outfit 25c. Particulars free.

C. A. Rukamp, Gen. Mgr., 87 Sandwich Street, Walkerville, Ont., Can.

Less Money in Household Expenses, More Money in the "Nest"

Save the dollars on Socks, Stockings, Underwear, Caps, Gloves, Mitts. Do all your knitting at home—it can be done quickly and easily with any one of the six Family Knitting Machines—ten times quicker than by hand, and costs less than the ready-made. Besides the family work you can do work for others and earn money. So simple—a child can operate these machines. Decide now.

Get our illustrated catalogue No. 634 Free, and help to cut down expense.

Agents wanted in every locality for typewriters and home money-maker knitting machines. Address

CREELMAN BROTHERS
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The "New Century" SMILE

Is worn by every housewife who uses one of these washers. The reason is quickly found for the New Century makes washing easy. It removes the hard rubbing and does the work more thoroughly than any other way.

The New Century Hand Washer works quickly and easily. It gushes the water through the fabric, leaving it sweet and clean in a few minutes. It cannot injure the finest garment you possess.

The product of twenty-five years experience in making washers, the New Century is without an equal. Patented features make it the leading hand washer.

Examine it at your dealer's or send to us for information.

CUMMER-DOWSWELL Limited
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ALCONO Pure Food Flavors contain no alcohol. Best for cooking purposes. Genuine flavor to the last drop. ALCONO flavors give perfect satisfaction. Send 25c for trial tube. Money returned if not absolutely satisfactory—30 varieties—all genuine.

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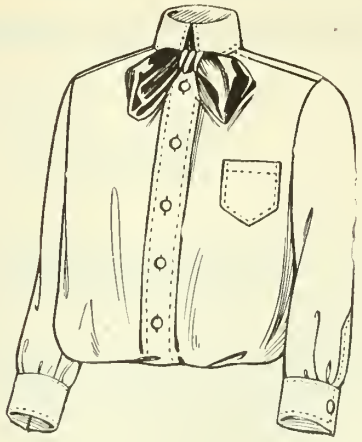

6362

6362---BOYS' BLOUSE

This design offers a variation of the popular sailor blouse. It is made with a yoke across the back, but this need not be used unless desired. There is also a removable collar. The sleeves are of the usual variety and end at the wrists. Such materials as duck, linen, serge and the like are used to make these blouses, with satin, or other contrasting material as trimming. The blouse pattern, No. 6362, is cut in sizes 4, 6, 8, 10, 12, 14, and 16 years. 8-year size requires 1⅝ yards of 44-inch material. Price of patteru 10 cents.

6395--- BOYS' REEFER COAT

This coat gives us a double-breasted garment cut on the plainest of lines. The neck has a small collar and notched revers, and there are the regulation pockets. The sleeve is plain. Molton, Kersey, coat serge and imported cloak materials are suitable for this coat, with velvet for the collar. The coat pattern, No. 6395, is cut in sizes 2, 4, 6, 8, 10, and 12 years. Medium size requires 1½ yards of 54-inch material, with ⅜-yard of 24-inch velvet for the collar. This pattern can be obtained by sending 10 cents to the office of this paper.

IF YOU ARE WISE

and anxious to have a clear, healthy complexion, unspotted and free from Pimples, Pustules and Blotches it will pay you to use

OUR HOME TREATMENT

The results will convince you that it has a most wonderful curative effect and is superior to anything you may have used heretofore. Consultation invited personally or by mail.

To permanently remove that hated blemish,

SUPERFLUOUS HAIR

there is only one sure and satisfactory treatment—Electrolysis. Our method is safe, sure and practically painless. **Moles, Warts, Red Veins,** etc., also positively eradicated. **Write now for booklet "F" and sample of toilet cream.**

Ask any questions when writing regarding our work and preparations or concerning any Skin, Scalp, Hair or Complexional trouble you may have.

Hiscott Dermatological Institute
63 College Street, Toronto. Estab. 1892

Egyptian Violet Glycerine Soap

Ideal for Mother and Child
Refined Soap for Refined People

THE ACME OF PERFECTION

Unsurpassed for beauty and fragrance, having the odor of the natural violet flower

It is composed of the very finest materials obtainable, scientifically and chemically combined, thus insuring the user of an absolutely pure soap.

When used for the toilet, the whole room will become permeated with odor characteristic only of the natural violet flower.

If your dealer cannot supply you, write us direct, Dept. G. Send 10c. for single cake, or 25c. for box of 3 cakes.

Manufactured by
Dominion Soap Co., Limited
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When you buy furs, if you are inexperienced you are solely dependent upon the recommendation and honesty to the dealer.

When buying furs at **Barrie's** your inexperience is no hindrance to you; you get exactly the same treatment and value as the expert. You take no risk—we build our business upon satisfied customers.

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Every Barrie Garment is backed by a guarantee. We promptly refund your money if goods are not exactly as represented in Style, Fit, Quality.

Experienced and skilled workmanship is put into every garment (Ladies' or Gents'), and anything **Barrie** is distinctive and correct.

We will send the furs to your nearest Express Office, collect on delivery, subject to your inspection, and if not as represented they can be returned at our expense.

Write at once to our nearest office for illustrated catalogue "B" and make your selection. Some valuable hints in buying furs are given. Write now.

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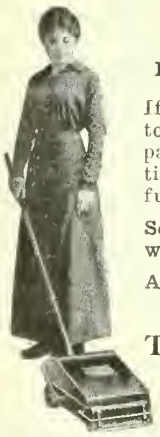
The Cadillac Vacuum Sweeper

is light, easy-running and powerful. Will go under beds and furniture. Beautifully finished-Life-Lasting-guaranteed.



The Cadillac Sweeper

MADE IN CANADA.
Several Models.
Prices from $9.50 to $14.00

If there is no dealer in your town, write us direct. We will pay freight charges. Satisfaction guaranteed or money refunded.

Send your order to-day, or write for the Cadillac Booklet.

Agents wanted for unassigned territory.

The Clements Mfg. Co.
Limited
78 Duchess Street
Toronto, Can.

Little Suppers for the Holiday Parties

Novel Ideas for the Country Hostess

By JEAN MacKENZIE

THE HOLIDAY season will bring its usual train of gay little social affairs in the farm homes of Canada. These gatherings are always popular, particularly among the younger members, and invariably include "refreshments" as part of the entertainment.

These may be as elaborate as one chooses, but in the average maidless home, the wise hostess inclines strongly towards 'eats,' which may be largely prepared beforehand, thus leaving her free to enjoy fully the evening with her guests.

Sandwiches of celery, chicken, tomato, cheese, nuts, olives, or some sweet preparation, a dainty cake, ices if you wish, and some delicious home-made candy will make a satisfactory menu. For a beverage, rich coffee or chocolate with a spoonful of whipped cream and a toasted marshmellow in each cup never fails to be appreciated on a winter night.

If salads are served, they may be of chicken, celery or fruits. At a card party, it is a good plan to serve supper just after a change of partners, so that those who play together do not sup together. If the guests can gather informally about the dining table, while refreshments are served, there is sure to be no lack of jollity. A chafing dish supper is always pleasant and interesting, though, for this, the party must necessarily be small, as no dish has yet been introduced that will cook for more than six or eight people. Of course, two dishes may be used, if you are the proud possessor of two, and a friend be invited to officiate at the second one. Have all the ingredients you need on a tray beside the chafing dish before beginning operations, as a moment's delay often spoils the dish. Perhaps this is especially true of rarebits and souffles, but all chafing dish cookery should be prepared and served at once.

Following are some recipes that are rather good for little suppers, including some for the chafing dish.

Windsor Sandwiches

Cream 1-3 cupful of butter, and add ½ cupful each of finely chopped cold boiled ham and cold boiled chicken. Season with salt and paprika. Spread this mixture between thin slices of bread.

Oyster Sandwiches

Arrange fried oysters on crisp lettuce leaves, allowing two oysters for each leaf, and one leaf for each sandwich. Place between thin slices of buttered white bread.

Celery Sandwiches

Mix 1 cupful of minced celery with 1 tablespoonful each of finely chopped apple, nuts and olives. Mix with mayonnaise dressing and spread on white bread.

Cheese Devilled in Biscuits

Mix ½ cupful of cream cheese with 1 teaspoonful each of French mustard, Worcestershire Sauce, chutney and tomato catsup. Season with paprika, and spread between the halves of baking powder biscuits.

Chicken Sandwiches

Mix 1 cupful cold minced chicken with ½ cupful of celery minced, and soften with mayonnaise. Add a very little minced onion, and spread on white bread.

Nut Sandwiches

Mince almonds, hazel nuts or pecans very fine. Add a little creamed butter with plenty of paprika, and spread between slices of entire wheat bread. Or add cream cheese and cream to the nuts; season with salt and paprika, and use with white bread.

Fruit Sandwiches

Remove stems, and finely chop figs; add a small quantity of water, cook in a double boiler until a paste is formed; then add a few drops of lemon juice. Cool mixture, and spread between thin slices of buttered bread. Sprinkle with finely chopped peanuts if these are liked, before putting on top slice.

Maple Sugar Sandwiches

Mix shaved maple sugar with minced and browned almonds, and spread between the halves of buttered biscuits, hot if possible. Or shave fresh, soft maple sugar, spread on buttered entire wheat bread, cover with a layer of fresh cream cheese. Add top slice of bread.

Orange Marmalade and Cheese

Mix ½ of a small cream cheese with ¼ cupful of orange marmalade, add 2 tablespoonfuls minced pecans, and enough cream to make it soft. Spread between slices of entire wheat or graham bread.

Some Nice Cakes

Chocolate Layer Cake with Mocha Filling

Beat 4 eggs very light, add 1¼ cupfuls sugar, beat and add 2 tablespoonfuls melted butter, 3 squares chocolate (melted) ½ cupful tepid water, 1 teaspoonful vanilla, a tiny pinch of salt, add 1½ cupfuls flour, 1¾ teaspoonfuls baking powder and ½ teaspoonful soda. Bake in two layers, fill and cover with,

Mocha Filling

Wash until free from salt, and cream ½ cupful butter, add 1¼ cupfuls XXXX sugar, 2 tablespoonfuls cocoa dissolved in 3 tablespoonfuls coffee, very strong and hot. Add 1 teaspoonful vanilla.

Delicate Cake

Cream ½ cupful butter, add 1½ cupfuls sugar, 2½ cupfuls flour, 3 teaspoonfuls baking powder, ¼ teaspoonful cream of tartar, 2-3 cupful of milk. Fold in ¾ cupful of egg whites; add 1 teaspoonful almond extract, and 1 cupful shredded almonds. Bake in a shallow pan for 40 minutes. Ice with white frosting.

Nut Macaroons

Beat white of 1 egg till light, and add gradually, beating constantly, 1 cupful brown sugar. Fold in 1 cupful pecan nuts, finely chopped and sprinkled with salt. Drop from tip of spoon, 1 inch apart, on a buttered sheet, and bake in a moderate oven until delicately browned.

Brownies

Mix together 1 cupful sugar, ¼ cupful melted butter, 2 squares chocolate (melted), ¾ teaspoonful vanilla, ½ cupful flour, ½ cupful walnut meats, chopped. Mix in order given. Line a seven-inch square pan with parafine paper. Spread mixture evenly in pan, and bake in a slow oven. As soon as taken from the oven, turn from pan, remove paper, and cut cake in strips with a sharp knife. If directions are not followed, paper will cling to cake, and it will be impossible to cut into shapely pieces.

Ices

Individual ices are very nice to serve at evening affairs, and they can be prepared and kept solid in the ice-box until needed.

Ice Cream Puffs

Make small puffs as for cream puffs, cut a lid from the top, fill with ice cream. Replace lid, and serve the puffs in glasses. Place on top of each a spoonful of whipped cream, sweetened and flavored.

Ice Cream Snowballs

Freeze Philadelphia ice cream very hard; remove dasher, pack and leave for three hours. Then take the ice cream out in the form of balls with a round ice cream scoop, roll quickly in fresh grated cocoanut, and lay on a platter covered with a paper doily. When serving, pass a pitcher containing one of the cold ice cream sauces.

Ice Cream Fontainebleau

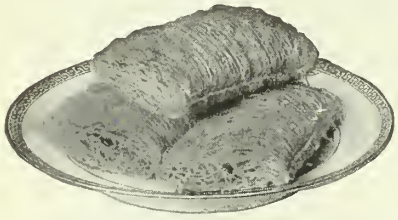
Fill tiny brown earthenware flower pots with ice cream. Smooth the cream, and dust thickly with cocoa and cinnamon and stick a flower in the centre of each. This is the way ice cream is served at an inn, in the famous forest of Fontainebleau.

"Eat More Bread"

Of course you should "eat more bread" and less meat—but be sure your bread contains all the body-building material in the whole wheat grain prepared in a digestible form. The only bread that fulfils all these requirements is

Shredded Wheat Biscuit

the natural, elemental food, not "treated" or compounded with anything—contains no yeast, no baking powder, no chemicals of any kind—just pure, whole wheat steam-cooked, shredded and baked. Served with hot milk it makes a nourishing, satisfying dish for a cold day.



Always heat the Biscuit in the oven to restore crispness. Two Shredded Wheat Biscuits with hot milk or cream will supply all the energy needed for a half day's work. Try TRISCUIT, the Shredded Wheat Wafer, for luncheon with butter, cheese or marmalade.

Made only by

THE CANADIAN SHREDDED WHEAT CO. LTD. NIAGARA FALLS, ONT.

Toronto Office: 49 Wellington St. East.

7% Investment—Profit-Sharing

Series $100, $500, and $1000 **TERMS FIVE YEARS**

Withdrawable after one year. Send for special folder.

Business at back of these Bonds established 28 years.

NATIONAL SECURITIES CORPORATION, LIMITED

CONFEDERATION LIFE BUILDING, TORONTO

Hitch Your Sleeping Schedule to Big Ben

Big Ben will wake you early enough for profitable before-breakfast action. His gentle get-up *call* starts the day with a *flying start* on thousands of farms.

For your accommodation he rings TWO WAYS. He'll get you up by degrees or in a hurry. Set him either way you wish—to give one long five-minute ring, or ten short rings at one-half-minute intervals, until you're wide awake.

He stands 7 inches tall; is triple-nickel plated over a tested implement steel coat, the handsomest and truest thoroughbred in the clock world. He has big, bold numerals and hands that show the time plainly at a glance, large keys that anyone can wind easily, and such a pleasant tone that you are glad to get up when he calls.

Big Ben makes early rising easy. He's the leader of the early morning brigade. His cheerful "good morning" ring calls millions of live wires to action. Thousands of successful farms are run on a Big Ben schedule. He starts you off right in the morning and keeps you right all day. From "Sun up" to "Lights out" he regulates your day. He'll work for 36 hours at a stretch and overtime, if necessary. The only pay he asks is one drop of oil a year.

He is sturdy and strong—built to last a lifetime. Yet under his dust-proof steel coat is the most delicate "works." That's why his on-the-dot accuracy has won him fame.

Big Ben's wonderful sales are due to his having "made good." His biggest hit has been with folks with the "make good" habit. He stands for success—that's why you'll like him for a friend.

When 3 million families find Big Ben a good clock to buy and 20,000 dealers *prove* he's a good clock to sell, it's evidence that he is worth $3.00 of *your* money. Suppose you trade $3.00 for him today.

A community of clockmakers stands back of him. Their imprint, *Made in La Salle, Illinois, by Westclox*, is the best alarm-clock insurance you can buy.

How They Hurry Home

to the evening meal when it has been whispered around that Mother is baking to-day. Since Mother commenced using **Reindeer Flour** her baking day has become a day of delight. **Reindeer Flour** makes such sweet, wholesome, appetizing bread.

If you have not tried Reindeer Flour order some to-day. Most all up-to-date Groceries like to stock Reindeer Flour.

PETERBOROUGH CEREAL COMPANY
SIMCOE STREET PETERBOROUGH

TRADE MARK

Excellent Chafing Dish Recipes

Creamed Sardines

Drain from oil one small box of sardines, remove back-bones from fish, then mash. Melt ¼ cupful butter, add ¼ cupful soft bread crumbs, and 1 cupful cream. Heat thoroughly, then add two hard-boiled eggs, finely chopped, the sardines, salt, pepper and paprika to taste. Serve on toast.

Welsh Rarebit

1 tablespoonful butter, ¼ teaspoonful salt, 1 teaspoonful corn starch, ¼ teaspoonful mustard, ½ cupful thin cream, a few grains cayenne, ½ lb. soft, mild cheese cut in small pieces. Melt butter, add corn-starch, and stir until well mixed. Add cream gradually, while stirring constantly, and cook two minutes. Add cheese, and stir until cheese is melted. Season, and serve on bread toasted on one side, rarebit being poured over untoasted side.

Eggs Cooked and Devilled

Cook 2 tablespoonfuls butter, 1 teaspoonful mustard, 2 tablespoonfuls tomato catsup, 2 of Worcestershire Sauce, 1 tablespoonful mushroom catsup, 2 drops Tobasco Sauce, and a little salt. Add six hard-boiled eggs, cut in slices, and pour over rounds of buttered toast; a little lemon juice may be added.

Oysters, Boston Style

Put strained oyster liquor in the hot-water pan, add salt, pepper, and, when boiling, add 1 quart oysters. When edges curl, add 2 tablespoonfuls butter, dust with paprika and serve on graham toast, well buttered.

Sardine Rabbit

Cook 1 tablespoonful butter, ½ teaspoonful salt, ¼ teaspoonful paprika, 1 teaspoonful mustard, 2 drops Tobasco. Add 1 cupful cream and 1 cupful cheese When boiling, add 6 large sardines, skinned, boned and mashed, and 2 beaten eggs. Serve on toast or crackers.

Love's Road

Now I take my scrip and staff
And follow where you go,
Dance to the music of your laugh,
Your mirth or sorrow know.

I care not where the road may lead
Or what the toll may be,
For some day you will surely need
This pilgrim heart of me.

And there and then, while skies are fair,
What path more straight or true
Than that by which your loads I bear
And cheer the heart of you?

—The Lady's Realm.

Spanish Gold

(Continued from page 38.)

high wall, a solid structure with mortar in its joints, along the western ridge of the island. He represented to his Board that such a wall would form a splendid shelter for the whole island from the westerly gales and would prevent careless sheep from falling over into the sea. The Board was still deliberating on the scheme.

Major Kent grumbled a good deal at having to climb so many walls; but Meldon, generally a field in front of him, encouraged him with false promises of easier walking further on. Thomas O'Flaherty Pat followed them at a distance. Meldon stopped to light his pipe, and allowed the Major to overtake him.

"I rather think," he said, looking back, "that the old chappie in the ragged clothes is tracking us."

"Let him," said the Major, who was rather out of breath and disinclined for discussion. "He can't do us any harm."

"He might not, but all the same I'd like to know what he has in his mind. I wish now that I'd brought Mary Kate along with me. She'd have come for another sixpence, I expect."

"Another of my sixpences."

"Oh, well, you needn't grumble. What's sixpence here or there compared to the pile of gold that we're going to take home with us? Think of it, Major, great fat doubloons, no wretched little slips of coins like our modern sovereigns, but thick, round chunks, weighing, maybe, as much as an ounce or an ounce and a half each, solid gold! And very likely there'll be gems, golden goblets with precious stones stuck in them. Those Spaniards were awful dogs for luxury."

"You don't really expect to find diamonds and emeralds, do you, J. J.?"

"Of course I do. What else have I come for if it isn't to find every kind of treasure? But here we are, Major, at the other end of nowhere. We've got to scramble round now."

The cliffs on the western coast of Inishgowlan are not very lofty, nor, except in odd places, are they really precipitous. Here and there the sea at high tide washes against their bases. Elsewhere there are long shelves of rock which are never more than half-covered by the waves, and wilderness of huge boulders, worn into all sorts of fantastic shapes, among which on calm days the sea winds itself into curiously fascinating pools and channels, where in storms there is a welter of foam and spray and angry water.

Meldon, keeping a few paces in front of the Major, scrambled along with the greatest activity. He scaled apparently impossible rocks, and seemed actually to enjoy slipping and stumbling among the pools. After an hour's hard work, with scratched hands and a large rent in the knee of his trousers, he reached the mouth of a little bay. There, seated on a large stone at the bottom of the cliff, was Thomas O'Flaherty Pat.

A few hundred yards from the north end of the island there is a break in the

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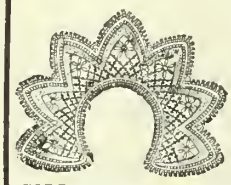

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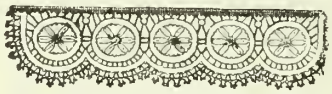

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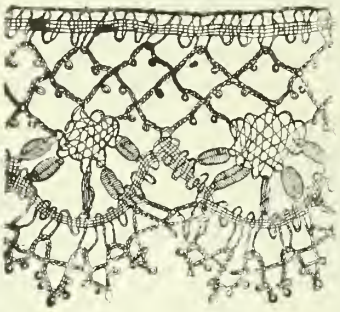

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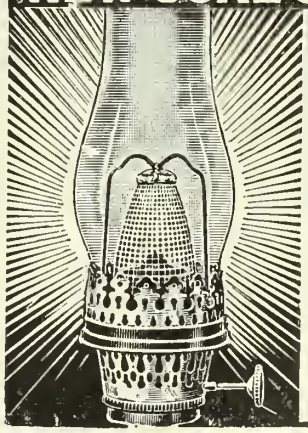

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We are very careful in the selection of our advertising that our readers may be protected and have confidence in those who use our columns to bring their products to your notice. If in return our readers make use of these columns it would rebound to their good as our editorial making is largely dependent on the additional revenue derived from our advertising columns, and if we are to continue to increase the interest of the magazine each year and give the best in those things which go to make up a high-class magazine—good press work—paper, illustrations and editorial material, we need your co-operation.

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line of cliffs. A narrow path, very steep and rough, has been made from the top of the ridge to the beach below It is used during the kelp-burning season by men and girls; who climb down it, gather sea wrack among the rocks, and toilsomely ascend again with dripping creels on their backs and soaked garments flapping round their legs. Old Thomas O'Flaherty Pat had used this path as a short-cut, and intercepted the men he was following.

Meldon waited for the Major, who was some distance behind.

"Look here," he said, "there's that old gentleman, Higginbotham's favorite enemy, waiting for us again. Now, what on earth does he want?"

"I don't know, and what's more, I don't care. But I see the path he came by, and I vote we take it as the shortest way home. I've had enough of this ridiculous expedition."

"Nonsense, Major. You can't go back now. We've hours before us still. But we'll recollect that path. It'll save us going the whole way back to the north point of the island when we've done. I wish I knew what T. O'Flaherty Pat supposes he's doing. It's perfectly ridiculous not being able to get him to talk. I can't imagine why he keeps up the pretence of not knowing English with me."

"Perhaps he doesn't know any."

"Rot! Excuse my putting it plainly, but that's simple rot. Of course he knows English. Everybody must know English."

"Well, there's no use standing here and staring at him. We shan't find out anything that way. Let's go on if you're bent on going."

"I shouldn't wonder," said Meldon, "if he had some kind of inkling of what we're after. Your great aunt said in her diary——"

"My grandfather. I never had a great aunt that I know of."

"Well, your grandfather. It's all the same. He said anyhow that the natives here knew about the treasure in his day. Now that's just the kind of information that would be handed down from father to son, and old T. O. P. is just the sort of man——"

"Who's T. O. P.?"

"T. O. P.? Oh, Thomas O'Flaherty Pat, of course. You can't expect me to say that whole name over again each time. Our friend Tommy is just the kind of elderly ass who'd be sure to remember the story even if everybody else had forgotten it. You back he's gone treasure-hunting on his own every fine day for the last fifty years, and now when he sees we're after it and going about the job in a jolly sight more intelligent way than ever he did, he thinks he's nothing to do but hang on to us till we find it, and then chip in and claim a share. I'll tell you what it is, Major, It's absolutely necessary to put him off the scent."

"How will you do that when you can't talk to him?"

"Oh, I'll manage. Mind you, he can understand every word we say. Come along, now. I'm going to pretend to be

a bug hunter, an entomologist, one of the fellows who look for marine monsters of unusual kinds in little pools. I wish to goodness I'd thought of bringing a butterfly net with me; a nice green butterfly net would have completed the disguise. Come along, Major. Take my arm and try and look affectionate. Put on the sort of expression you'd wear if we were scientific pals of the same laboratory in London. Do your best to display an intelligent interest in what I say."

Stumbling among the stones, but walking arm-in-arm, they approached Thomas O'Flaherty Pat.

"Major," whispered Meldon, "do you happen to recollect the name of any insect?"

"The flea," said the Major promptly.

"The scientific name," said Meldon. "What good are fleas. He knows what fleas are well enough, and is probably much better acquainted with their habits than we are. He knows that we wouldn't come here to look for fleas. Tell me a scientific name. I can't think of one myself, except 'fritillary.' Well never mind. If you can't, you can't. Now, listen.

In a clear, loud voice, calculated to carry some distance, he said—

"I hope, Professor, that our long journey has not been in vain; I hope, I trust, not. This place, the rocks and pools beyond us, seems to me a likely habitat for the Athalonia miserabilis, the marvellous sea-beetle, found nowhere but on these western shores."

He cast a rapid glance at Thomas O'Flaherty Pat. The old man appeared wholly unimpressed, and sat gazing with wide, dreamy eyes past the strangers straight out to sea. But Meldon was not the man to be baffled by any affectation of indifference and inattention. Convinced that the old man understood English, and was keenly interested in what he heard, he took the Major slowly across the beach, climbed a neighboring ledge of rock, and stooped down as if to make a minute examination of a weedy pool. Looking up, he was gratified to see the eyes of Thomas O'Flaherty Pat fixed on him.

"I thought I'd rouse him," he said to the Major. "Now I'll make him sure that I'm after nothing more thrilling than the corpse of an Athalonia miserabilis."

With every appearance of intense excitement, Meldon dropped on his knees beside the pool. He took off his coat and rolled up one of his shirt sleeves; he lay flat on his stomach; he plunged his bare arm deep into the water. Then he rose and looked round to see how Thomas O'Flaherty Pat was taking the performance. The old man had left the stone on which he sat, and was approaching the pool.

"I thought I'd draw him," said Meldon.

After examining minutely some shreds of green seaweed which he had dredged from the depths of the pool, he plunged his arm in again. Thomas O'Flaherty Pat came quite close, looked at the curate with an expression of some wonder, and passed on. Reaching the edge of the sea, he, too, lay flat down, bared his

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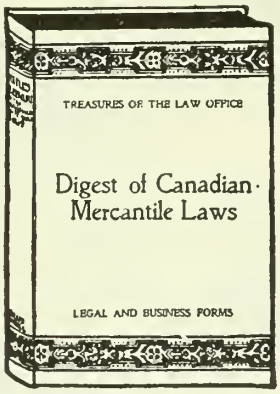

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arm and plunged it into the water. Meldon, rising to his knees, looked at him.

"What's the old boy at now?" he said.

"Looks very much," said the Major, "as if he was trying to catch a Paphlagonia What's-it's-name, too."

"Athalonia miserabilis," said Meldon. "Do try to get things right, Major. You set up to be a tidy man and take it on yourself to lecture me every now and then for getting things into wrong places, but you're the most untidy person I ever met in conversation. You never get a name right."

"Well, Athalonia whatever you like. Anyhow, he's trying to catch one."

"He can't be, can't possibly be. There's no such creature, so far as I know."

"Well, he's catching something, and what's more he's caught it and he's bringing it over to you."

Thomas O'Flaherty Pat came towards them, and certainly carried booty of some sort in his hand. With a dignified and gracious bow, he presented Meldon with a large red crab.

"Good Lord!" said Major Kent.

The curate took the creature carefully, and bowed politely in return.

"Thanks awfully," he said. "I mean to say, of course, merci beaucoup."

"Ni Beurla agam," said the old man.

"Oh, never mind about the Beurla. What I want you to know is this, I'm greatly obliged to you for the crab. So's the professor here. We weren't exactly looking for crabs. We were looking for an Athalonia miserabilis, but we're just as much pleased as if you brought us one. The fact is we're both passionately fond of crab, dressed with breadcrumbs and pepper, you know. And in London, where we come from, the chief city of the Sassenach—you know the place I mean—crabs are too expensive for poor men like us to buy. You can't pick them up there the way you do here. You'd hardly believe the price a fishmonger would charge for a crab like this."

Thomas O'Flaherty Pat shook his head solemnly.

"Ni Beurla agam air bith," he said.

"All right," said Meldon. "Good-bye for the present. So long, old boy. We oughtn't to be taking up your valuable time. I really believe he doesn't know a word I'm saying. Look here——"

He seized the old man's hand and shook it heartily.

"Ceud mile failte—there, that's all the Irish I know, and if that doesn't send you off home I can do no more."

This hearty welcome produced the effect intended. Thomas O'Flaherty Pat, after a courteous salutation, turned and climbed slowly up the path which led to the top of the cliff.

"I hope," said the Major, "that that will be a lesson to you, J. J."

"A lesson about what?"

"About telling lies. You see the trouble they get you into."

To be continued.

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Our Homemakers' Conference

Have you ever stood on the threshold of the inevitable treadmill of the New Year and sighed a little? That sounds pessimistic, but I guess everyone does it once in a while even when they wouldn't for worlds be relieved of one iota of the routine that is solely their own.

An old clock felt like that once. It was New Year's Eve and the old clock thought, "Here, I have to begin again and tick sixty ticks in every minute for sixty minutes in every hour for twenty-four hours in every one of the three-hundred-and-sixty-five days and the prospect is discouraging." Then with a sudden inspiration the old face brightened and he said, "But I only have to tick one tick at a time" How much worry and work and weariness might be saved if we were satisfied to just "tick one tick at a time." Housework may be monotonous and sometimes it may be hard, but we all appreciate the truth in the lines,

"'Tis rare delight, I would not change my skill
To be the Emperor with bungling hands,
And lose my work, which comes as natural
As self at waking."

Some Farmer's Wives Give Their Views on Dairy Work and Profits

WHAT PART should the woman on the farm have in the work and profits of the dairy industry? Following are the views of a few of our readers:

"No doubt the question of finances has been freely discussed and settled by many farmers and their wives, not always in the same way, but according to different conditions.

We take it for granted that we are all carrying on mixed farming, where there are crops, cattle, etc., the proceeds of which will be sufficient to pay for all machinery, improvements about the farm, hired help, and all outside expenses connected with the farm.

As the farmer and his wife are partners in all else, what more satisfactory solution could be arrived at than that the wife should have the proceeds from the cows and hens to keep up her part of the partnership?

Nine times out of ten she will make a wise use of the privilege, and often can buy more economically than a man, besides the joy of having some thing in her purse to spend as she pleases.

What a spirit of independence there is about it!

On the other side, what a spirit of humiliation to have to ask for every dollar with which to foot the many household bills.

A woman must have a very crushed broken spirit to need about $1.50 some day to pay, perhaps the grocer for some article of food and ask her husband for that sum, to be handed a dollar with the inquiry, "Will a dollar do? That is all the change I have." Had she the butter money in her purse she would have suited her order to her purse and save herself the humiliation.

I am speaking this by observation not experience.

Of course when young people are starting out I fully believe in them going hand in hand, sharing their work as far as their strength lies, also the expense and I think no true woman would refuse to share up the butter money to help her husband through a tight place.

After a few years when in a reminiscent mood what a lot of comfort can be taken by a woman when looking through her home and seeing one article after another bought one at a time with money she had saved.

For instance, she would say to herself, "This rocking chair is so comfortable, it is the one I got that fall Johnnie was a baby."

Or: "What a lot of comfort I have taken out of that sideboard which I got by doing my own work that summer girls were so scarce."

Hoping my letter is not too long I will close, thanking you for the space it will take up and for the many helpful hints we have had through the columns of your magazine." Mrs. H. F. B.

The Woman's Part of Dairy Work

We are thankful that the day is past when the "women-folk" on the farm are not expected to do the milking.

And now that the separator has come into use—and not a day too soon—let the men turn the separator, as it is much too hard work for the girls. We must take care that our girls are not overtaxed, and expected to do heavy work. We feel inclined to say "therein lies the cause of so many of them leaving the farm and going to town or city."

We consider it the woman's work to keep the dairy utensils clean, to churn

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and market the butter. Most girls enjoy working the butter and forming it into prints, especially if there are neatly printed papers to wrap it in. Have your name and the name of the farm printed on the butter-paper. It is an inspiration to use care and make good butter as it goes out to the public as a sample of your handiwork. Let the girls market the butter. Some women think they should have all the butter money but is that fair taking into consideration the work the men have taking care of the cows? In every way we think they should have a share in the profits from the milk and butter. Women on the farm are generally supplied with all the spending money that they need, whether they get it from the eggs, the butter, or from other proceeds of the farm, then why not let the men share in the proceeds from the cows

Blue Bell.

How an Institute of Seven Members Grew to Sixty-Seven

THE LITTLE BRITAIN branch was organized in September of 1903 with a membership of seven. The growth of the Institute at first was slow, and for some time only the faithful few attended the meetings. We managed to have four meetings a year in order to claim the grant. The branch would have died a natural death but for the officers who felt they hated to give up, so they made an extra effort to get the members out and took fresh courage and by getting the members to work fresh life was instilled in the meetings and it soon became a popular thing to be a member and important to attend each meeting.

We soon concluded to try holding the meetings at the homes of the members. This we found increased our attendance and later increased our membership. In the summer we hold our meetings in the country but in the winter in the village.

We have printed programmes. We find this a good thing for the interest of our branch as it gives the members a looking-forward to the next meeting. They want to go to enjoy the programme and hear where the next meeting will be and perhaps offer their home for a meeting.

The Programme Committee tried to give each member some work during the year. This gives all a responsibility once at least, apart from the discussions or the question drawer, which we have almost every meeting. We now have 67 on the list as nominal members.

One year we invested $25 in a "vacuum cleaner," and paid for it in less than a year. We adopted the plan of charging each member ten cents per day for the use of the cleaner, but outsiders twenty-five cents per day. We divided our branch into four section, North, South, East and West, and in each section was one member responsible for the cleaner while in her section. It was then taken to the next division and so on till each member had used the cleaner. Last year we gave five dollars to the Hospital for Consumptive Children. Some time ago we invested in a small circulating library.

For several years we served refreshments at the close of our meetings, but our branch became too large to be possible for each and all members to serve lunch, therefore we resolved to drop the lunch for a year and note the result. We found that it worked out alright, and the interest kept up just as well, so we have never taken up the lunch again, except at the summer series of meetings, when we have a sort of picnic and at the social evening, or "Gentlemen's evening" in February we serve sandwiches, cake, coffee and candy. At this meeting we have two or three local speakers on such topics as these: "Points of Law a Woman Should Know," "Politics in the Home," "Tuberculosis," "Progress of the Institute," also "Parliamentary rules," some points on medical lines and business hints, etc.

Usually, if we have a demonstration on salad and dressings, jellies, dressing and cooking fowl, ice cream, cold dishes for summer, or candy making the demonstrator passes a taste to each person on individual plates and the hostess serves coffee or lemonade.

We have a speaker from the department in the winter in connection with the "Farmers' Institute," and we find that it is quite helpful to us and increases the interest and attendance at the evening meeting as we have a joint meeting at night.

A number of good papers have been given at the monthly meetings by our members. This is helpful to the branch but I believe the one who gives and prepares the paper is the most benefited herself. At one meeting the young girls (not members of the Institute) gave the programme and it was very good. The girls always furnish the musical part of the programme.

At the December meeting we have exchange of Christmas gifts but the outlay is not to exceed ten cents, yet we can put as much of ourselves into the gift as we like. This year we are requested to have our gifts suitable to send to the Children's Hospital.

In August we had a flower contest and prizes were given. In the spring we have exchange of plants. Two years ago we had a "Bread Making" contest. At one meeting we had a pleasant diversion in the form of a darning and button hole contest. I believe contests in sewing, knitting, embroidery, crochet work, etc., are beneficial as well as a sensible work for the Institute to take up.

We are now agitating the forming of a "class course" to have a teacher sent from the Department. The committees are canvassing the members to see what course they choose, and Mr. Putman thinks we can secure a teacher for January. We hope to get members enough to form a good class. J. A. Dix.

How Alberta Organizes Her Townships

Assessments for Tax Purposes Made on Land Values Only

By AUGUST WOLF

FIFTY-TWO rural municipalities, including two in the far north, have been organized in the province of Alberta, and it is expected that eight others will be formed before the close of the year. This gives the agricultural districts local self-government, the assessments for tax purposes being made on land values only.

The department of municipal affairs, of which Hon. Charles Stewart is minister, gave out the following synopsis of the Rural Municipality Act, adopted at the last session of the Legislature, at the government building in Edmonton a few days ago.

Under the provisions of the Rural Municipality Act, now in force in Alberta, the province is divided into territorial units. These areas contain nine townships each, except where the country is broken by large lakes or rivers. In such cases the lakes and rivers have been made boundaries of the territorial units, and the areas are of nine townships, each, more or less. The division of the province in this way was arranged starting from the southeast corner and carried out regularly, except where the country is broken.

The resident electors of any of these territorial units, if there is a population in the proportion of one person to each square mile, may have it established a rural municipality; the method of procedure being as follows:

Any of the ratepayers interested may appoint five of themselves to act as a municipal committee. This committee may then petition the department of municipal affairs, for authority to have a vote taken, so that the ratepayers may decide whether or not a rural municipality should be established. This petition must be accompanied by a statement signed by 50 resident electors. The necessary authorization and all the required forms are then sent to the municipal committee, which arranges for the vote, it being necessary that this be taken within 30 days of the date when the authorization is received. If a majority of the votes cast are in favor of a rural municipality, it will be established as soon as the returns of the vote are sent in to the department, the organization taking effect the second Monday in December, following the election of councillors, for which nomination to take place a week earlier, the poll, if held, is taken the second Monday in December.

A municipality will be governed by a council of five members. At the first election these councillors will be chosen at large. Each ratepayer will have the privilege of voting for five councillors. After the first year, if deemed advisable, action may be taken to have the municipality divided into divisions or wards, and a councillor elected for each division; thus it is left optional with the municipality after the first year whether or not the councillors should be elected at large or elected by divisions. This provision was made on account of the unsatisfactory results in many local improvement Districts where the councillors are elected by divisions.

Where elected by divisions there is frequently a tendency for each councillor to try to run the affairs of his division as an entirely separate organization. This as a rule is detrimental to the interests of the community as the best results from any organization of this kind can only be arrived at by all the members of the Council working together and making improvements for the good of the district as a whole.

Unless some definite system of road building is arranged to serve the whole community, there is not likely to be nearly as good results from the expenditure made, nor will the improvements be of the same service to the ratepayers.

The councillors elected are required to choose one of their number as the head of the council. This man is known as the reeve of the municipality. He shall be the chief-executive official, and it shall be his duty to be vigilant and active in all the affairs pertaining to the municipality. He will have power to suspend any persons employed by the municipality pending a council meeting, and he will also have power to appoint special constables whenever necessary. The members of the council may be allowed the following fees: Three dollars a day for each meeting of the council up to the number of 10 each year, and $3 a day for 10 days in the year employed inspecting or laying out work. A charge of 10 cents a mile may be allowed in each case. The reeve may be allowed $4 a day for similar periods instead of $3, and also mileage at 10 cents a mile.

Where the electors neglect to elect councillors they may be appointed by the government. Only resident electors can vote for or be elected councillors. All nominations must be made in writing, and each nomination paper must be signed by five resident electors. It is also necessary that the nomination paper should have attached to it a statement, signed by the candidate, signifying that he will accept the office if elected.

The council has power to appoint the necessary officials to carry on the business of the municipality. The only permanent official required is the secretary-treasurer, who may also act as assessor. The appointment of all offi-

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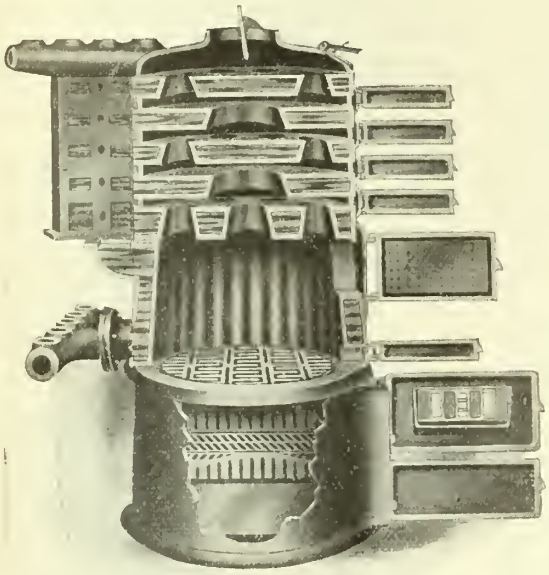

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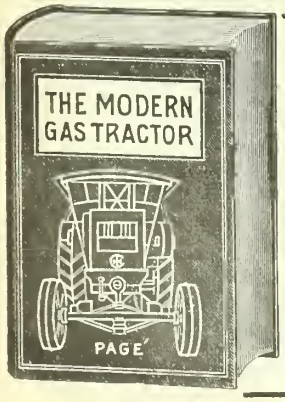

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cials, as well as the arrangement as to what salaries they should be paid rests entirely in the hands of the council. However, the municipality is prohibited from making any appointment to any office by tender; the tendency being when a petition is let by tender to give it to the party who will do the work for the lowest salary. This is frequently poor economy, the saving in salary being often much more than counter-balanced by the loss to the district in the way in which the work is performed.

Rural municipalities have power to deal with practically all matters of a local nature by regulations under the act or by by-laws. Among other things which may be dealt with might be mentioned the passing of a by-law to permit of borrowing money by issuing debentures, by-laws dealing with such matters as public health, cemeteries, hospitals, aid to the needy, wolf bounty, prairie fires, traffic on roads and bridges, aid to agricultural societies, extermination of animals impeding agriculture, vice and drunkenness, weigh-scales, ferries, expropriation of land for road purposes, planting of trees, removal of dirt or filth from the roads, howkers and pedlars, arranging for temporary roads, water supply and many other things of a similar nature.

There is also provision for the municipality arranging for the care of the sick persons, who are unable to procure the necessary attendance and treatment.

In connection with the powers of the council it might be noted that no municipality has power to grant a bonus to any company or corporation in any way, either by cash or by exemption from taxation.

The council of the Municipality is given full power to enforce the provisions of the noxious weeds Act.

The council may also pass a by-law regulating stock running at large. Whenever a council passes a by-law covering this matter, the provincial laws relating to stock running at large cease to operate within the municipality. This by-law need not be the same for the whole municipality. If conditions are not the same, different regulations may be made for different parts of the municipality. However the provincial laws in regard to this matter remain in force until a by-law is passed by the council. The schedule of fees under any municipal by-law passed under this provision will be prescribed by the department.

With reference to borrowing of money it might be explained that the Act provides for the municipality making a temporary loan, pending payment of the taxes for the year. This loan cannot, however, exceed 60 per cent. of the total taxes levied by the municipality in the preceding year. If it is desirable to have a loan for a longer period the municipality may borrow money by issuing debentures, but any by-law giving authority for the issuing of debentures must be voted on by the ratepayers. Two-thirds of the ratepayers voting must vote in favor of the by-law and it must be approved by the department before any debentures can be issued. Debentures

cannot be issued for a greater sum than 5 per cent. of the assessed value of the lands in the Municipality, and no higher rate of interest than 6 per cent. per annum can be paid. All debentures issued must be countersigned by the minister of municipal affairs.

The taxes levied by the municipality must be levied according to the actual cash value of the lands within the boundaries of the municipality; this actual cash value being the value of the land without regard to any improvements made by the expenditure of capital or labor. The maximum rate of taxation is 1 per cent., or 10 mills on the dollar. If necessary, an additional levy may be made to meet payments on debentures. School taxes for all rural school districts situated within the boundaries of a municipality will be levied by the municipality and be payable to the secretary-treasurer of the municipality. There will, however, be no flat rate of taxation for school purposes over the whole municipality.

Each school board will deceide on the rate required to meet their expenses, as they do at the present time. They will advise the municipality as to the area of their district and the amount of money required. The municipality will then levy a sufficient rate on the lands in each school district to bring the sum asked for by the school board. These taxes will be levied at the same time as the municipal taxes. Only one tax notice will be issued. This will show the ratepayer the amount he is required to pay for municipal taxes, and for school taxes. The school taxes will be transferred from time to time to the school boards of the different school districts from which they are collected .

Where a rural school district is partly in one municipality and partly in another municipality, the one having the larger part of the school district within its boundaries will levy the school taxes for the whole district. Where a school district is evenly divided between two municipalities, the department will decide which municipality should levy and collect the taves. In connection with this matter it might be explained that where a school district is short of money, on account of taxes not having been paid in, the council of the municality may make a temporary loan to the school district pending payment of the current year's taxes. The municipality is the larger organization and is better able to arrange a temporary loan of this kind than a school district and may frequently be in a position to advance all the money that is required from moneys it may have to its credit and which it may not need until later in the year.

There is ample provision in the act for appeal being made from any assessment which any ratepayer should deem to be unjust. Thecouncil will sit as a court of revision to deal with all such appeals, and if any ratepayer is not satisfied with the decision, he may appeal to a judge of the district court. The costs of such appeal will only be the costs of witnesses and the procurinfi of their attendance. The decision of the judge shall be final.

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While the limit of the ordinary rate of taxation is placed at 1 per cent. or 10 on the dollar, it might be pointed out that for small areas of little value there is a minimum rate for municipal tax of $2, and a minimum rate of school tax of $2. This provision will apply more particularly in the case of subdivided lands within a rural municipality. Where a ratepayer only owns one lot, which may not be of sufficient value to bring in $2 for taxes at the rate levied, the amount he will have to pay will be $2 for municipal purposes ,and $2 for school purposes.

In connection with the payment of taxes it is provided that a municipality may, if so desired, allow a rebate of 25 per cent. on taxes levied on lands cultivated and cropped during the previous year. This rebate would work out as follows:

Suppose a ratepayer has 100 acres under crop and the taxes on that acreage for any one year amounted to $4.00. If the council allows a rebate of 25 per cent., this ratepayer would pay $3.00, instead of $4.00; but the ratepayer holding a similar acreage which was not being cultivated and cropped would have to pay the full amount of $4.00. It is, of course, optional with the municipality whether or not this rebate should be allowed, but the allowance of such a rebate would no doubt have a tendency to encourage the cultivation of the land.

The municipality has full power to enforce payment of delinquent taxes either by levying distress, by entering suit or by taking action to forfeit and sell the land.

There is also provision in the Act whereby any municipality may unite with 19 other municipalities to form a hail insurance district. A by-law to do this must be submitted to the resident electors of the municipality and receive a majority vote before it can become law. As soon as 20 municipalities within a reasonable distance of each other have passed such a by-law, a hail insurance district will be established by the department. This district will have a board to look after its affairs. The board, made up of the reeves of the municipalities included, will make an estimate of the amount that will be required to meet current losses within the district. They will then notify the municipalities as to the amount required, and a rate will be levied accordingly on all assessable lands within the municipalities in the district.

The board will employ the necessary officials, such as secretary-treasurer and inspectors. Losses may be reported to any member of the board who shall forthwith cause an inspector to inspect the loss and report thereon. The maximum indemnity for a loss is $6 an acre. Any person may appeal from an inspector's report to the board, and the decision of the board in regard to any loss will be final.

Where a hail insurance district is formed, the board is required to forward a statement of the rate to be levied in the different municipalities to the Minister of Municipal Affairs before January 15, to be approved. Where a dis-

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trict is established it is required to continue in operation for five years, after which any municipality, if the majority of the resident electors so decide by voting on a by-law, may withdraw from the organization, and if less than 20 municipalities remain in the district there is provision for the winding up of the affairs of the hail insurance district.

By the organizing of a district of this kind the electors of a municipality will be able to obtain hail insurance at cost. Their grain will be insured because it is within the boundaries of the district, and it will not be necessary for any application to be made for insuranme. There is, therefore, no danger of a farmer forgetting to insure his crop, as sometimes occurs under the present conditions. As all assessable land is subject to assessment for hail insurance, a small levy will bring in sufficient to meet all losses. As an example of the expense in a hail insurance district, take a case where lands within a hail insurance district have an average value of $10 an acre. A rate of one mill will bring in $40,000, which at a valuation of $10 an acre would only be 1 cent an acre, or $1.50 a quarter section. This rate over a whole hail insurance district would permit of a maximum indemnity being paid on some 6,000 acres, allow for considerable acreage not subject to assessment on account of being Dominion Government land, and also allow for the expenses of administration. If the amount raised in any one year is in excess of the amount required, it would lower the assessment in the following year accordingly.

In connection with municipal organization there appears in some places to be a fear on the part of the ratepayers that they may be subject to heavy taxation and may get deeply in debt by borrowing money on debentures. As the rate of taxation is fixed by the councillors elected by the ratepayers of the municipality, the question as to the rate of taxation is, therefore, one which rasts entirely in the hands of the ratepayers themselves. All money by-laws must be voted on by the ratepayers, and unless a two-thirds majority of them are in favor of debentures being issued, they cannot be issued.

On the other hand, where there is fear that the councillors are spending the money of the municipality in any other way than for the best interests of the municipality, a meeting may be called by any twelve electors petitioning the reeve to do so in order that the affairs of the municipality may be discussed. The council of the municipality is required to call a meeting two weeks before the date of nomination for the discussion of municipal affairs. It is also required that a copy of the auditor's report should be mailed to each ratepayer. Thus the ratepayers may be kept closely in touch and fully informed of the way in which their money is expended, and if business is not being properly carried on they will be in a position to have matters remedied. The whole matter is in the hands of the ratepayers and the Act makes ample provision whereby they may protect themselves.

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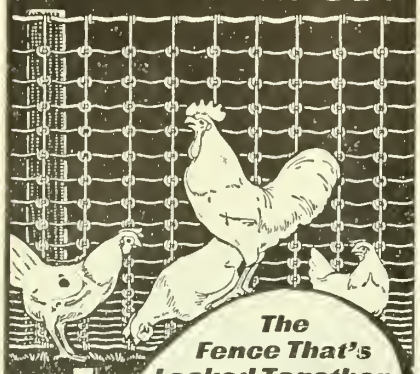

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Chas. A. Tyrrell, M.D.
Room 358, 280 College St., Toronto, Ont.

In some localities where the existing rate of taxation is quite low, it might be a good investment for the municipal organizations to raise the rate of taxation with a view to more improvements. It might also be good business for certain municipalities to issue debentures and borrow money. The borrowing of money required need not place such a heavy burden on the municipality as would appear. In a municipality where the land is valued at $10 per acre and $20,000 is borrowed, the loan would place an indebtedness of less than 10 cents on each acre of land in the municipality, and there would be a period of 20 years at least in which to repay this amount. The municipality is prohibited from paying a higher rate of interest than 6 per cent.

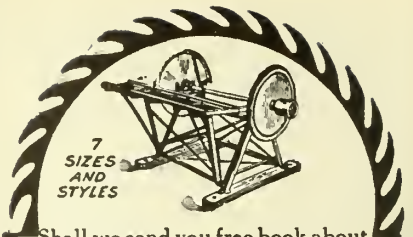
Twenty thousand dollars would put the roads in many municipalities in good shape, and it would enable the improvement required to be made immediately, instead of taking a number of years by means of the current revenue. Even debentures for much larger amounts would not impose a heavy burden on the municipality and might easily be a good investment. Fifty thousand dollars would make provision for a great deal of permanent improvements and yet it would not place a debt on the municipality of more than 25 cents an acre, or $40 a quarter section with at least 20 years in which to repay it.

In many cases the ratepayers would be amply repaid by the time saved in going to and from market on account of the improvements made. If a farmer is able to make three trips to town, do the work that now requires five, the expenses saved would soon meet any increase in taxation that would arise from an increase in rate, or from borrowing an amount mentioned.

In dealing with this matter it might be noted that the provisions of the Act allowing a debt to be incurred up to 5 per cent. of the assessed value gives ample borrowing powers, as in a municipality where the land values only average $5 an acre, $50,000 could be borrowed. Therefore, the amounts that might be borrowed would be anywhere from $50,000 to $200,000.

The system of taxation according to values instead of according to acreage has been criticised, but it would appear that the system of taxing according to value is more just than taxation according to acreage, it being only fair that a man owning valuable productive land should pay more taxes than a man owning poor land.

In connection with this act it might be noted that the two last annual conventions called by the Alberta Local Improvement Districts Association, passed resolutions asking the Legislature to pass legislation providing for the formation of rural municipalities. The question as to whether or not any territorial unit should be established a rural municipality is, however, left entirely in the hands of the electors. If they desire such an organization they may have it by voting for it.



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It will be noted with reference to the question of organizaton that any territorial unit that is not established as a rural municipality may be established a local improvement district and carry on business under the Local Improvement Act(so that if it is not desired to have municipal organization it is possible to have organization as a local improvement district.

A Ball of Blue Yarn

(Contin ed from page 22.)

him believed Dubois to be raving in delirum.

"You came to see me, Narcisse? Why you never came to see me when we lived in the same village!"

Jean smiled a little bitterly, for old memories were surging painfully near the surface.

"No! I hated you, Sylvestre—because you won Adèle from me and when she could get no news of you until word came that you were dead"——(a smothered cry from his listener caused Dubois to pause a moment) "I tried to win her for myself, to persuade her that the little one—yes, she had a baby girl some months after you left,—it was her duty to marry again and so secure herself and the child from want. But I might as well have talked to the Holy Virgin for all the good it did and as I could not bear to watch her working so hard to keep the home for the child and your mother, and the Company were wanting men, I took to the trapping. They sent me to work for Thorpe, and he told me how you had been lost in the great snow-storm a few months after you got here, and of course I believed him until by chance I heard some Indians talking of the great white trapper who lived always alone, and coming seldom to the Fort. Something in the description they gave of this man made me suspect that they were talking of you and I asked Thorpe for particulars of this trapper. I could see him start when the question was put, then I grew bold with the strong conviction that was upon me, and said: 'Thorpe you are a liar! That man is none other than Jean St. Sylvestre, who is not dead at all!' Thorpe grew white with rage and cursed my impudence, stumping about the hut like a madman—Jean, that man is doomed—declaring that I was raving and you were certainly dead.

I left the hut and got the Indians to guide me part of the way. After they left, I lost myself, and it was only the grace of God, and perhaps the prayers of Adèle, that brought me to your hut."

Narcisse crossed himself piously in thanksgiving, and Jean stooped to wipe the beads of sweat which hung on the man's forehead.

"God bless you, Dubois," he whispered brokenly. "God bless you for your goodness to her and to me!"

"But Jean," Narcisse began again, "what has kept you away all these

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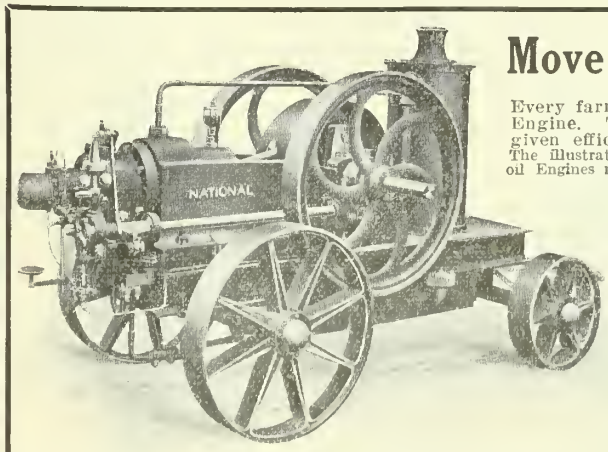

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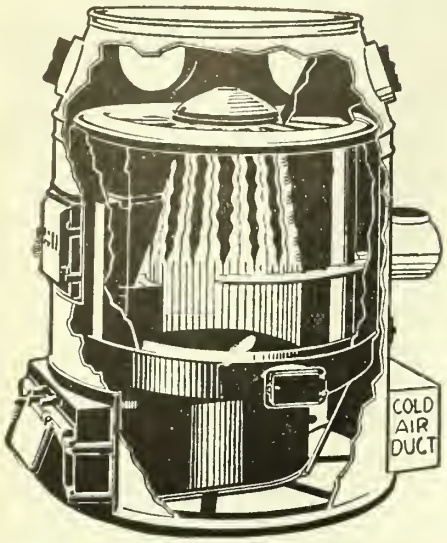

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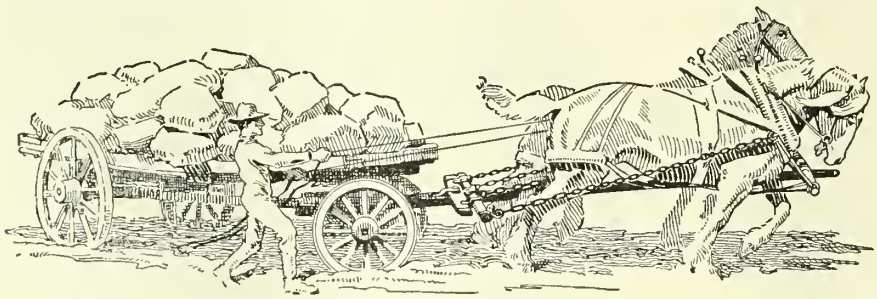

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years?" He turned his head to get a better view of Jean's face.

"Kept me away!" Sylvestre growled through fast closed teeth, "nothing but the damnable lies of that hound Thorpe! When my six months of service were up, I went to the Fort expecting to find a letter from Adèle awaiting me there, but Thorpe said there were none and then told me that my mother and wife had both died of diphtheria and you—you Dubois—had brought the news! Why I believed him God only knows. But there was no reason in my mind for him to play me false—and here have I been wasting my life in this accursed wilderness, longing for death to end my misery and give me back my loved ones."

"Your wife lives, but your mother died eight years ago, Jean."

Jean started.

"Do you know the exact date of her death, Narcisse?"

"Yes. It was the night of the tenth of November. I remember because it happened just three weeks after my own father's death," said Narcisse, around whose mouth lines of fatigue were showing.

Jean rose to examine the birch bark calendar, then returned to the bedside.

"Narcisse, my mother came to me that night—yes she did!" he reiterated in response to the unconcealed scepticism of Dubois' eyes—"She kissed me just as she used to do when I was a boy, and it was so real that when I awoke I thought to see her standing beside my bed. It was her good-bye to me, Narcisse—Oh, my God! my God! Had I but known!"

St. Sylvestre threw himself on the bed beside his friend, his whole frame shaken with sobs, and the Indian coming in with an armful of wood, threw it down and ran to the bedside: but it was Narcisse, not Jean who needed his ministry. Dubois had fainted.

The remaining days of Dubois' convalescence were spent by the two men in long talks over the past, and speculations on the future, since Jean would not listen to his friend's suggestion that he should start alone and at once on the homeward journey; leaving the invalid to follow later with the Indian.

An irrepressible longing tugged at the heart-strings of the trapper, bidding him go: but Jean St. Sylvestre was no weakling and it was only when Narcisse had sufficiently regained his strength that preparations for the journey were made.

Accordingly, a rough sleigh was improvised on which the convalescent could be helped over part of the long journey by the other two; and in this wise the little party made its way to the Fort.

Forgiveness had not yet come to the heart of St. Sylvestre, and he longed to get his hand on the man who had laid waste his life.

"If I kill him, no one could blame me," he had said, and Narcisse felt in his soul the truth of the assertion, but Jean never claimed his revenge for before they reached the Fort, his enemy had passed beyond mortal vengeance and

as they entered the little settlement, a band of trappers passed them, bearing the dead body of Thorpe to a temporary resting-place beneath a mound of rough grey stones.

• • •

Spring was early that year, and to Jean, paddling slowly up the St. Lawrence, the sight of the tender green of leaves and grass, was one of great refreshment, bringing relief to eyes weary of gazing upon vast and silent snowfields.

His memory was busy with a by-gone day, and purposely he directed his canoe towards the overhanging rock on which Adèle Martin had sat that first time of their meeting.

Shading his eyes with one hand while paddling with the other, he gazed over the blue grey waters until he sighted the spot he sought.

On his rock of sacred memory, two figures stood—a man and a woman—and a feeling of resentment possessed him at the sight of such desecration.

Unheeded by them, he reached to within a few feet of the bank and then, using his paddle only to guide the canoe, drifted quietly under the overhanging rock.

Too much filled with the sense of ownership to realize that he was eavesdropping, Jean started as a girlish voice overhead said:

"No, Maurice — don't ask me. You know it cannot be while she is alone and needing me night and day as she does."

"You make your mother an excuse because you do not really love me," replied the young man, bitterly. "We could easily arrange so that you might still do for Madame St. Sylvestre all that is necessary, but the truth is that you don't want to marry me—and that being so, it would be better to end our engagement at once."

"Since you wish it, our engagement is ended! Here is your ring!" cried the wounded girl, throwing to him the simple circlet with its golden hearts entertwined which had been the pledge of their betrothal.

Turning her back on him, she walked off up the little pathway, leaving her lover alone on the rock, too much astonished by this unexpected turn of things to do more than gaze stupidly at her retreating figure.

"I must get there before her," murmured Jean St. Sylvestre, delaying no longer, but sending his canoe spinning along the shore to his old landing place.

One pull from his strong arms sent the little craft to safety on the river shore then the man took to his heels and ran up the rough and now seldom used path, calling aloud as he went, "Adèle! Adèle!"

• • •

On the trysting rock, Maurice Beaulieu had remained, lost in bitter reflection—cursing the lover's impetuosity which had probably cost him the girl he loved.

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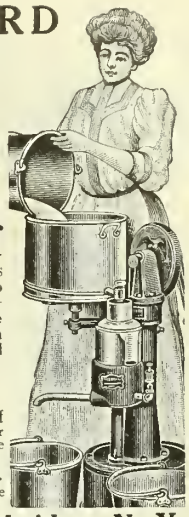

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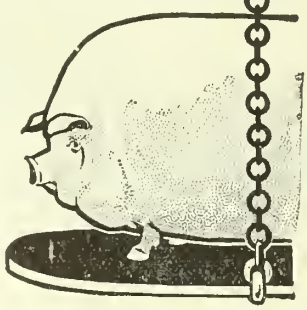

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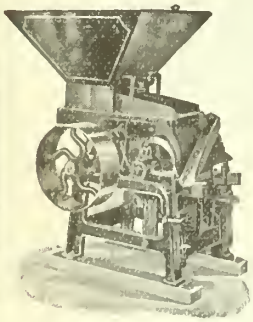

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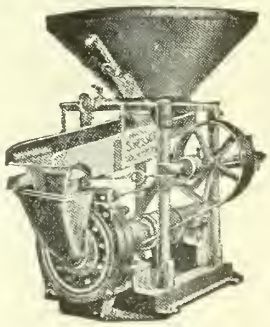

Feed Grinder.

He had no sense of time, but grown weary with standing, had thrown himself at full length on the grass, and was lying thus when the sound of hurrying footsteps drew his attention from his sad reflections. Looking up quickly, he saw Madeleine St. Sylvestre running down the path to the river and without realizing what he was doing, Maurice rose and stood with outstretched imploring arms, half expecting that she would pass him by.

But Madeleine, the tears coursing down her cheeks, ran straight into the shelter her lover had provided, and laying her head on his bosom, whispered brokenly:

"Maurice, father is alive and has come home and mother doesn't need me any more!"

"Are you sorry—dear?" He asked, stooping to look into the girl's face, but only the tender pressure of her beloved head on his bosom, answered him.

Food Value of Nuts

Rich in nourishment, nuts are an unappreciated substitute for meat. Peanuts, for example ,afford twice as much nourishment as beef steak, rice or beans, and eight times as much as potatoes.

Next in food values to the peanut, comes the chestnut, which is so starchy as to be almost a bread. In Italian kitchens, it takes the place of cereals. Chestnuts are used in soups, sauces, purees, forcemeats, entrees, and all manner of sweet dessert dishes.

Fresh almonds are exceedingly nutritious, but prove more digestible when blanched. This is quickly done by covering the nut meats with boiling water, letting them stand three or four minutes, then rubbing off the brown skins between the thumb and forefinger. Dried, then salted in the oven, almonds make an excellent digester, a couple of them, carefully masticated, frequently relieving indigestion from other causes.

English walnuts, hickory nuts, and pecans are also high in nutritive value. The black walnut, which is stronger in flavor, is growing in favor for cakes, salads, and pickles. The pistachio seed or nut, is being introduced in increasing quantities, and the little green kernels are not only used for coloring and flavoring but as digesters.

The Bait Was All Right

A Methodist bishop, accompanied by his two beautiful daughters, started out one morning on a fishing trip. While the bishop was fishing, an old fisherman came along and spoke in a friendly way:

"Ketchin' many, pard?"

"Brother, I am a fisher of men," replied the bishop, with dignity.

"Well, you brought along the right kind of bait, all right," said the other man as he looked the two girls over.—Ad-League Bulletin.

Making a Profession of Living

Men Who Have Developed Continents May be Pigmies in Private Life

By O. S. MARDEN

For hundreds of years men have designed and carried out rules for their guidance in commerce, agriculture, forestry, navigation and military tactics; they have devoted time and money to promoting effective methods in hospitals and various philanthropic organizations, but few men have framed rules to protect their personal health or improve their individual private life. In this article Dr. Marden makes a strong point for the maintenance of efficiency in ourselves and for putting our standards of daily living and the characters we build from day to day ahead of the monuments we leave for the world to remember. This is the first appearance of this article.—Editor.

IF WE watch the progress of the erection of a great skyscraper we see that every piece of steel, every bolt, every brick, every stone, every stick of timber, every board, has reference to the completed whole.

The contractor does not start out with a great promiscuous pile of stone, steel and lumber, with the vague idea of making the best building he can with the materials. He first makes his plans and specifications, and then every stick of timber and every piece of steel must be cut with precision, so that it will exactly fit the plans.

Most characters are not built up upon deliberately carried out plans. They are the result of haphazard thinking, planless efforts. They are a conglomerate of mental attitudes and moods, conflicting currents of thought, with little order or design.

The great trouble with us is, that we do not make a profession of living, or man-building. We do not study our life as we do our business, or profession. We do not bring ourselves up. Many men who conduct their business and professions most scientifically and effectively, are bunglers at living. Their own individual characters, outside of the qualities which enter into their vocations, are a mere hotch-potch of the most haphazard thinking and planless living.

Men who have developed continents and built empires, have been pigmies, and often vicious members of society, as regards private conduct, simply because they never trained themselves or studied themselves scientifically. Men who have been giants in their initiative, their tremendous forcefulness, in the development of their executive faculties, have often proved weaklings in their moral development, in their moral characters. They have been a blessing to civilization in their constructive ability, but a menace to society, because in their systemless lives they never learned the art of living, they never made a profession of living. Their own personal development was planless and haphazard.

If a man like Napoleon had been scientifically trained in the art of living and man-building as he was in the art of war, he probably would have gone down in history as one of the world's chief benefactors, instead of one of its greatest curses. Think what Julius Caesar and Alexander the Great could have done for civilization, had they been as well trained in the art of living as in the art of war! There are men in Sing Sing whose resourcefulness, aggressiveness and vigorous initiative would have enabled them to reach a very high place in society, had they only possessed character.

Many men, especially those of small talent, are apt to think that a bad man has no qualities whatever that should be emulated, but successful men learn a great deal from the good qualities of bad men. Few men have ever lived who combined so many of the qualities which make for success as did Napoleon. He was a perfect model of initiative, a miracle of forcefulness, and he had a colossal will-power. But he lacked character—the rock upon which so many strong men have been wrecked.

Is there a sadder thing in the world than genius gone wrong—a mighty engine of power which, instead of doing the good it was intended, is used to destroy, to tear down? It seems unaccountable that any human being, when he becomes conscious that he has been the recipient of a divine gift, a mighty force, intended to make him a great power in the world, should pervert its use, should not appreciate the responsibility, the obligation, which accompanies it.

Every one should have some great, all-absorbing, life-steadying purpose which will give meaning to every step we take, so that our efforts are not misdirected or thrown away, but everything will contribute to bringing about the end planned in the life progress. How much more we can accomplish for character when working by a noble plan. A little systematic training, the professional attitude toward living, the daily focusing of the mind upon the character qualities which we wish to build up, to strengthen, would in short time completely revolutionize our civilization. The brain will very quickly help us to form methods which correspond to our habitual thought, even when mechanically forced, until the habit is fixed. After a while the brain will remember its new plan and aim, and automatically steer the thought in the right direction. Such practice in scientific thought-concentra-

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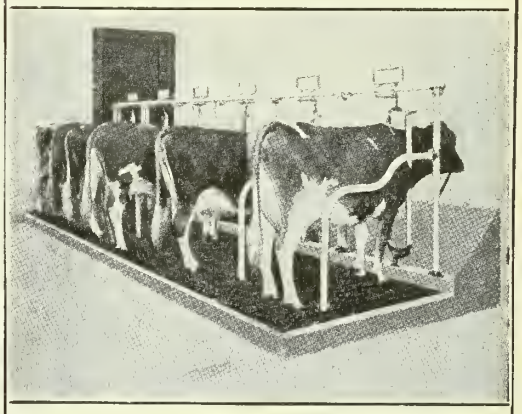

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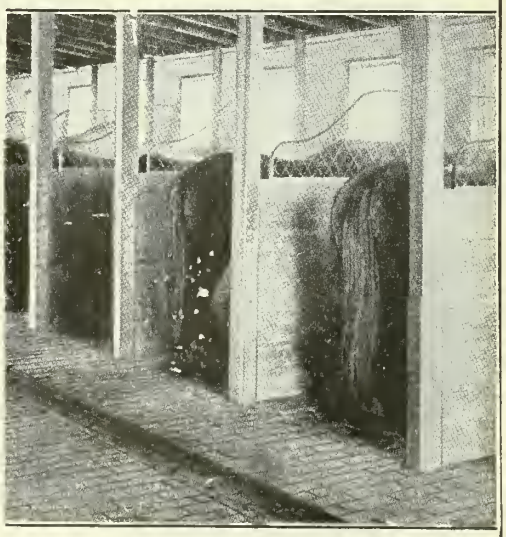

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tion every day, with our great life plan always in view, would not only multiply our powers but wonderfully improve our characters.

Most of the friction, the bickerings, the quarreling, the nagging, the bitter denunciations in the home are caused not by any desire to cause suffering or to hurt one another's feelings, but by some one's human machine being out of order. In most homes they do not run smoothly; there is something wrong somewhere; they are not properly lubricated; the parts are not adjusted to express harmony; the joints squeak; there is friction in the delicate bearings, so that it is impossible to express harmony, mutual consideration, sympathy, love, which the human machine was intended to express. Tired, exhausted, abused nerves, are often responsible for this.

The human machine was intended to be adaptable to all sorts of conditions—not merely to ideal conditions, but to an environment filled with all sorts of friction, things that should not be, things that are entirely wrong. It was intended to produce harmony, even in the most discordant environment.

Why is it that men who are so systematic and orderly, who are so exact and thorough and scientific in their vocation, keep everything in order about them, except the human machine upon which the success of everything else depends? Why is it that men are always studying, trying to increase their efficiency in their business, their profession, and yet their human machine is rarely in a condition to do even second-class work?

They insist upon having their automobile which takes them to the train, or to their place of business in the morning, in perfect condition, but they start the human machine on the day's run when it is often in a most deplorable state, when the machine is not lubricated, when parts are out of order, the screws loose, the steering gear defective, often without motor power or mental gasoline; and then they despise themselves for such a poor showing for the day.

Many people, even if they do start out with the machine in fairly good condition, burn out its delicate bearings and put it all out of tune by their fits of temper. Their hot sparks of passion set fire to their delicate mental mechanism. Many wise men do foolish things that mortify and humiliate them beyond expression, because of this hair-trigger temper, which goes off, explodes automatically, before they have time to think. They are constantly doing all sorts of impulsive deeds which mar the efficiency of the human machine for the greatest achievement of all—character. Isn't it worth while spending a few years in human engineering, in the study of the machine, upon the expert knowledge and wise management of which your whole destiny depends?

The coming man will not allow external conditions, petty annoyances, the jealousy and the envy of others, to rob

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him of his good temper, put him out of sorts, so he cannot perform a real man's work and live a real man's life.

There are certain things which every human being should resolve—that he will not allow anybody to rob him under any circumstances of his peace of mind, his mental balance or his honest day's work. No matter what comes, resolve that the right to do the biggest thing that is possible to you every day of your life, is an inalienable right. Allow no discordant conditions, no external powers, no meanness or unfairness of others, to rob you of this birthright.

Start out every morning with the determination that you are going to do the work of a man, no matter what comes, what happens, or who opposes. Resolve that no human being or power can rob you of this right, and that whatever happens or does not happen, you are going to so conduct yourself during the day that you can retire at night with the consciousness of having done the work of a man, and not a pigmy, and that nothing has been able to divert you from your purpose.

Somehow most people seem to take consolation, and excuse themselves for their life slips, in thinking that they are, in a way, the victims of the mind, which acts in opposition to their wills. But we know perfectly well that in most things the brain obeys the will. We are discovering that the operator, the great cause, the great life power, is behind the brain and commands it as its servant to carry out its will.

If we decide to do a certain thing at a certain time, or to take a train for a certain place, or to keep an appointment, we know very well we are capable of making the mind carry out our desire. This is equally true in planning and building character. Our collisions come from the lack of control of the human machine. We are either absent minded, we get mentally bewildered, and are thrown off our guard and the human machine runs us down, or it is a collision that is to blame, or a brain fire, as in case of anger.

If everyone would, even for a few moments every morning, concentrate upon his weak points, and instruct the brain to look out, to switch the train quickly in case of prospect of a hot temper collision; if we should command the brain to be on guard and resolve that for that day at least, under no circumstances would we do the thing which so embarrassed us and humiliated us yesterday, under no circumstances would we burn up our precious energy in the mental conflagration as we did yesterday, when it took us hours to remedy the danger from the short circuit of crossed wires. After a little while, we should find that we had educated the brain so that it would act automatically, and we should congratulate ourselves that we had stopped more than one source of what previously had been a perpetual humiliation. This would encourage us to go on strengthening other weak links in the character chain.

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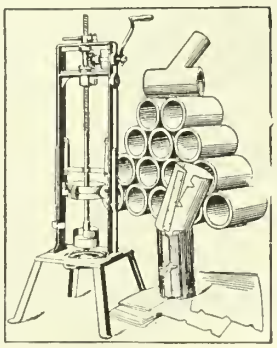

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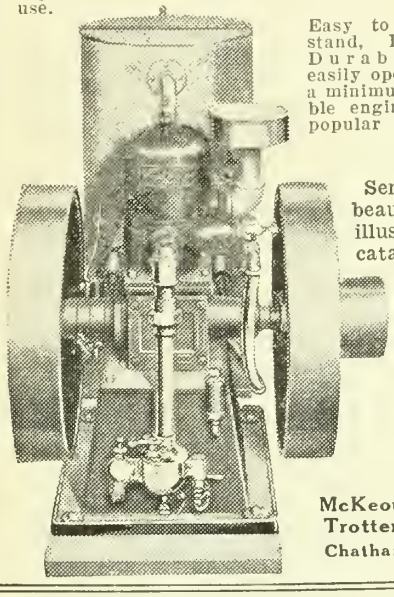

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them. The youth must concentrate upon law to be a good lawyer, upon medicine to be a successful physician, upon art to be a true artist. Now, to be an artist in living, an expert in running one's brain and controlling one's passions, one must concentrate upon this profession. By concentrating the thought upon how we will rule the mind for the day, pondering upon the mistakes and blunders we made yesterday, and cautioning the mind, and so training it, that it will act automatically when anything happens and we have not time to think out a thing deliberately, we get the secret of right living, which, if carried out, would revolutionize civilization. It is the art of arts, the profession of professions, the trade of all trades, to learn to direct mind and will in building character.

China's Trade in Medieval Times

A valuable contribution to the history of commercial intercourse and the study of the commercial relations between the different Oriental peoples has recently been issued by Professor Friedrich Hirth, of Columbia University, and Mr. W. W. Rockhill. This is a translation from the Chinese, with introduction and commentary of the work by Chan Ju-Kua, treating primarily of products and incidentally of the customs of the various countries known to the Chinese in the twelfth and thirteenth centuries of our era.

An interesting feature of this work is the history of the growth and development of the trade of Canton, which has always been an object of earnest solicitude to the Chinese government because of the large revenue derivable from it. One of the port regulations implies a determination to give all importers an equal chance, for as each ship arrived its cargo was discharged and the merchandise placed in the government storehouses and kept there until the last ship of the season sailed in. Only then were the goods placed at the owner's disposal for sale, the government retaining thirty per cent. as customs duties. In this way the first comer was not allowed to secure the cream of the market to the prejudice of those who might have had a longer voyage or have been detained by unfavorable weather.

Toward the close of the tenth century the Chinese government realizing the great value of its Canton trade undertook to encourage its development by offering special inducements, among which were special trading licenses. As a result, merchandise poured in so freely that the difficulty was to find a good market for it. The government import duties amounted to thirty per cent. from the middle of the ninth century A. D., and this rate remained practically unchanged for several centuries thereafter. If any part of a ship's cargo was removed without the knowledge of the officials the whole cargo was confiscated and the offender was punished according to the gravity of the offence.

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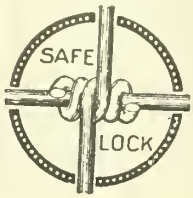

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Time to Start

For the production of market eggs the best time to begin actual operations will be with the spring hatching. The houses may be built during the summer and made ready for the mature pullets in the fall. This will give good results in the least possible time. When it is desirable to start with adult birds for egg production it will be necessary to have the houses built during the fall and winter and have the birds in them by January, so that they can be fed and cared for at least two months before the eggs are saved for hatching.

Where market broilers are the object, the incubator and brooder houses should be completed by the first of September, so that the first hatches can be accommodated by that time. The broilers may then be ready by Thanksgiving time, which is the opening of the broiler season.

All things considered, the spring of the year will generally be the best time to start, as the birds can be cared for during the summer much easier than during the winter. It is cheaper to hatch and rear young birds than to purchase a considerable number of adults. The buyer of adults is not always sure of getting good layers. The purchase of a few adults of known ancestry and good breeding is the safest way to start. Their eggs may be hatched and a good strain built up in that way.

System the Key Word

The one point above all others which the poultryman must be sure to consider is the absolute necessity of system in all branches of his work. The poultry business, which is composed largely of definite details, requires a careful systematizing, not only in the keeping of books and accounts, but in all the routine work,—as, feeding, hatching, brooding, breeding, and preparing for market. The work can be done much more easily and cheaply by having system; it can be done each time with the same degree of care, and the danger of overlooking any detail is lessened. The three stepping-stones to success in the work are system, promptness, and energy.

This extract is taken from the second edition of Lippincott's Farm Manuals, Productive Poultry Husbandry by Harry R. Lewis.

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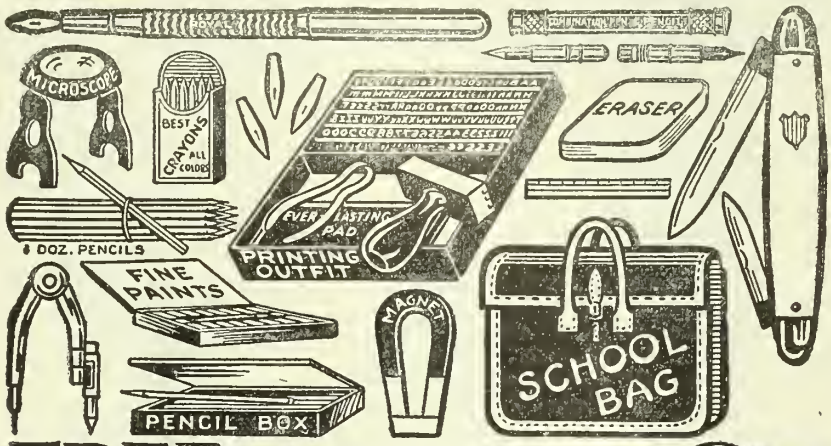

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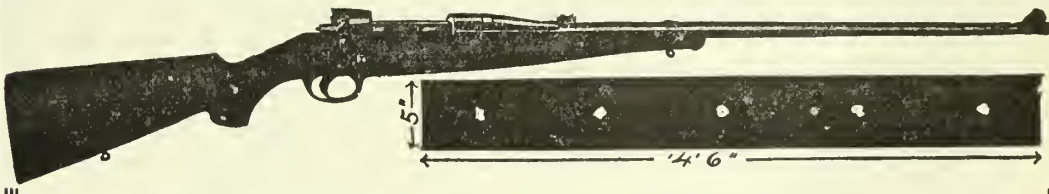

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Giving the Farmer His Own

A Movement is on Foot to Aid Both Producer and Consumer

By J. KERR ABBOTT

This sketch from the pen of a well-known Canadian journalist opens a new phase of the cause of the high living cost in Canada. The article differs from many others on the same subject, in that it offers a solution to the problem. We hear much of co-operation, but the subject of co-operation in the form of freer trade relations between the provinces of Eastern and Western Canada is young enough and feasible enough, as it is treated here, to command the interest of every farm reader.—Editor.

TO PROVIDE for a direct exchange of commodities, without the intervention of any middleman, between the farmers of the East and the West.

That, in broad outline, is the problem which farmers' organizations in Ontario are seeking to work out in co-operation with other farmers' organizations in the Western provinces.

Existing conditions are peculiarly favorable to the making of arrangements, such as it is proposed to effect. The farmers of the East and the farmers of the West are engaged in wholly different lines of agriculture. Those of one great division are as much complimentary to the other as are the people of rural Ontario on the one side and the people of Toronto on the other. The farmers of Eastern Canada, or, say, Ontario, are producing commodities of which Western farmers are purchasers. Western farmers have an overflowing surplus in lines in which Ontario farmers are buyers.

In Ontario we have raw fruits, dairy products, poultry, eggs, and canned goods for sale. We are buying feedstuffs for cattle and hogs. Western farmers have feedstuffs to sell, and they are purchasers of the commodities which Ontario farmers have to dispose of.

Exchanges between the two sections are going on now, but numerous middlemen form the medium of such exchanges. What is proposed is simply that the services of these middlemen be dispensed with, and that the farmers of the East and West buy from and sell to each other, in their corporate capacity, just as John Jones and Tom Brown, living on neighboring farms, buy from and sell to each other, as individuals, at the present time.

In the West a thoroughly efficient farmers' organization is already in existence, through which business can be transacted at that end. The Grain Growers' Associations of Manitoba and Saskatchewan and the United Farmers of Alberta have a combined membership of some forty thousand. From the loins of these organizations there has sprung the Grain Growers' Grain Company, a business organization of farmers acting together in a co-operative way that is without a parallel in America, and is probably unequalled in the whole world.

This Grain Growers' Grain Company receives grain, grown by the members of the Western farmer organizations, and finds a market for it. As part of the equipment for handling this business the Grain Growers' Grain Company has elevator plants at Fort William and on the Pacific Coast, and it operates receiving elevators at points of production.

This farmers' company has gone further than that. It has leased and commenced the operations of a flour mill, through which its members are supplied with flour. It has purchased a timber limit, through which these same members will shortly be supplied with lumber, taken from the company's own forest, and cut in its own mills. It has undertaken the handling of coal, and is supplying fuel at first cost. In the seven years the company has been in operation it has handled over one hundred million bushels of grain. The total business last year amounted to $60,000,000. Its profits for the year totalled $170,000, and it has a cash reserve of $200,000. Most important of all, by forcing competition on the private dealers who had previously monopolized the grain business of the West, it has literally added millions to the revenue Western farmers would otherwise have obtained from their grain crops. Its flour mill had barely got into operation when the price many farmers had been paying for flour was reduced by 80 cents per sack. That is the sort of organization there is at the Western end for the purpose of carrying out the part assignable to the West in the proposed co-operative union between East and West.

In the East we are not so well prepared for the work it is proposed to undertake. We have a multiplicity of farmers' organizations, but unfortunately these various bodies are not united together. We have the Grange, Farmers' Clubs, Farmers' Institute, the Western and Eastern Dairy Associations, various fruit growers' and vegetable growers' associations, and the different breeders' associations. There are few Ontario farmers, with any title at all to the use of the word "progressive," who do not belong to one or the other of the organizations. But as stated, there is no common bond of union.

If all these bodies were joined together, the farmers of Ontario would be as well equipped for the purpose of carrying out the great scheme of co-operation proposed as are those of the West.

The advantages which would follow such bringing together need hardly be pointed out. One specific illustration may, however, be given. At the recent annual convention of the Ontario Fruit Growers' Association Robert Thompson stated that Winnipeg jobbers are not satisfied with anything less than a profit of $300 per car on apples. Western retail dealers get another shave on top of that. Most, if not the whole of this cost, would be eliminated if we had direct dealing between East and West. Similar savings could be effected on breeding stock, dairy products, canned goods, poultry and eggs shipped to Winnipeg, and passed through the Grain Growers' Grain Company direct to the members of the various farmers' organizations scattered between Winnipeg and the Pacific Coast.

Corresponding savings could be effected at this end of the deal. Western oats, barley, and feed wheat could be shipped in car lots direct from point of production in the West to various points of consumption in the East. This would mean a very considerable reduction in the cost of finishing cattle and hogs in Ontario for the local and United States markets. It would reduce the cost of dairy production, and thereby add to the profits of production in that line as well. It would spell in short, both for East and West, greater economy in buying and increased profit in selling.

The question now arises, where is the man who is big enough to unite all the various farm associations of Ontario in one organization for the purpose of carrying into effect the scheme under contemplation? Is Robert Thompson, who has made such a stupendous success of the St. Catharines Co-operative Cold Storage Company, the man of destiny? Is the mantle to fall upon J. E. Johnson, the man who put Norfolk county apple orchards on the map of Ontario? Would P. W. Hodgetts, around whom the various local co-operative apple growing associations are uniting their forces, fill the place? Is it to be E. C. Drury or someone as yet unthought of? Whoever the man may be, if he can carry out Ontario's share in this truly gigantic co-operative undertaking, he will render a service to the farmers of this province, the value of which cannot be estimated in dollars.

Riches of Mackenzie River Basin

(Continued from page 14)

the whole, the precipitation is light, usually ranging, according to official figures before me, from about ten to sixteen inches per annum at the Crossing and Dunvegan, much of it occurring, fortunately, during the growing season. 1910 and 1912 were very dry while 1911 and 1913 were wet in Grande Prairie. Even in the dry years, grain grows good straw but as time goes on and the soil loses its virgin fertility more moisture will be required to bring into solution sufficient plant food to secure a crop. Forage other than grain is likely to become a problem. The natural grass fails with repeated cutting and timothy is not an unqualified success, generally producing short heads and irregular growth, although some plots have yielded a fair crop the season they were sown and outside the window by which I write is a small piece still half green after the hard frosts. What alfalfa and clover may do remains to be demonstrated. Vegetables of all kinds produce abundant crops of a quality much superior to that known in the East. Saskatoon berries, blueberries, raspberries and black currants grow wild some years in considerable abundance.

Most of the soil of this North country is immensely rich, consisting of black silt full of vegetable mold, where not burned too hard, overlying a subsoil of varying consistency but nearly always dark. Water, usually of good quality, occurs in lakes, streams and occasional springs. A "quarter" with water is prized, however. Oats thrive with Alberta luxuriance, producing straw five feet long or more, even on land where the growth of grass is short. Barley is a pretty sure crop while spring and fall wheat of early varieties will ripen flour grain in most localities—perhaps three times out of five and will be safer as the country becomes older. Some problems in Peace River agriculture will require to be solved, but on the whole, its future appears to be well assured. Acre for acre, land may never be worth so much as in the favored sections of old Ontario, but this only means that values will remain somewhat less and larger holdings will be the rule.

A Fine Class of Settlers

Perhaps never in the history of the world was a new territory settled by a finer class of people. The less desirable races of Europe are unrepresented. Canadians, Americans from the Western States, a sprinkling of British-born, and a few North Europeans seem to comprise the settlers so far as I have learned. Law and order prevail. Schools and churches are promptly established. Alcoholic liquor is contraband except under special permit. Many a man with a weakness for strong drink has voluntarily come here to keep away from it. The difficulty and expense of getting into the country and securing supplies

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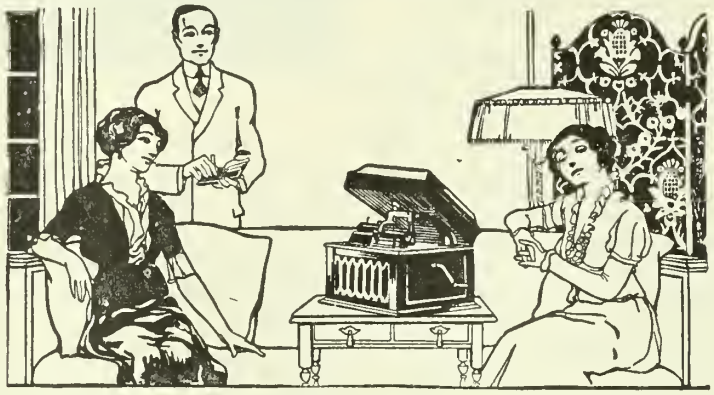

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have deterred persons lacking in enterprise and heroism. Not a few of the settlers are men of means who have purchased South African veterans' scrips and come here to locate them. This, however, has the disadvantage of spreading settlement unduly, especially where a man and his wife each hold scrip, entitling them to 320 acres apiece, and the head of the family homesteads a "quarter" besides.

It is true the conditions of life are plain and somewhat crude, but there is no lack of good society, athletics or recreation. Good clothes are worn; education and culture predominate. Dances, concerts, literary society meetings and sports claim much attention. Grande Prairie dotes on baseball, and everybody with his family and dog attends the Dominion Day sports, which continue for three days, pilgrims of twenty miles or so camping overnight on the scene.

A township north of the Peace thrown open during the past summer was all filed upon in three days. Township upon township has been taken. In the choice Grande Prairie district only a few good "quarters" remain for homestead entry and patented land commands ten to fifteen dollars an acre. Lately the stream has been pouring through here into Pouce Coupee and Spirit River, while many have located north of the Peace on the beautiful plain between Dunvegan and Peace River Crossing.

Railroads are racing into the country. Two have commenced construction. The McArthur road, called the Edmonton, Dunvegan and B.C., should have steel laid next summer from Edmonton to Grouard and is supposed to be heading for Spirit River Prairie, fifteen miles south of Dunvegan. The interests behind this road have purchased land at Peace River Crossing, paying for it, report says, with C.P.R. cheques, which has given rise to a rumor that the E.D. & B.C. is to be, after all, a Canadian Pacific line, with possibly a branch to the Crossing. Whether this be true or not the C.P.R. has other surveys headed towards the Peace. Besides its line to Athabasca Landing, the Canadian Northern has commenced construction on a route northwestward from Edmonton, heading through Grand Prairie towards the mountains. The G. T. P. will undoubtedly come in. I believe a railway up the Fraser River Valley from Vancouver is under construction which, when built, will place us within a day's journey or so from that rapidly-growing Pacific port. The markets of the Pacific are the export markets of the future for Alberta, and the Peace River country will have easier access to the Coast than any other area of our Western plains.

The stir of agriculture, commerce, transportation and industry is awakening the echoes of the North. The last great area of homestead land in the civilized world is being settled. Population is coming from the corners of the continent. Before many in the East are aware of it, the last big block of good land in the West will have been taken. The Mackenzie Basin has been discovered, and the discovery is good.

By GRASMERE

The care of the stock and planning for the spring work will keep us pretty busy for some weeks now. Along with this how about organizing a Grange or Grain Grower's branch or Farmer's Club in your neighborhood? What do you think of arranging for classes in stock judging or some other line of agriculture for the boys? The evenings are pretty long during our winter season and you never know what a help these things are 'till you have tried them.

Insect Pests of Live Stock

Nearly all animals are subject to attack of lice during the housed-in months, and it is well known among stockmen that when these pests, particularly the sucking lice, once get a footing the animals become run down and are more likely to succumb during a hard winter. With thousands of specimens on an animal the loss of blood must be considerable. Where horses are well fed and carefully groomed the insect is of little importance but with cattle not only is the condition of the animal affected but the milk supply is materially lessened as well.

These insects on horses, cattle, sheep or hogs are easily destroyed by applications of rather weak solutions of any of the standard sheep dips, the tobacco and sulphur dip used against the mites and the arsenic solutions used against ticks. The eggs, however, are more resistant and it is advisable to dip or spray the infested animals a second time after an interval of ten days or two weeks. Where only a few of the stock are infested the greasing of the animal with a mixture of kerosene, lard and sulphur is sufficient.

Let the Young Colts Out

We should let our colts have more exercise and feed smaller quantities of hay during the winter. Given smaller rations and more freedom to exercise they will develop more uniformly and in the spring will have shorter, smoother-lying coats. Fed carefully on choice hay and a liberal amount of clean grains with several hours run in the open every day, a colt will show more rapid growth, uniform development, and better general condition.

Winter Management of Laying Hens

The problem of winter management is to create, so far as possible, ideal artificial conditions by making an environment to correspond as nearly as possible with conditions of spring which is the hen's natural laying season. During extremely cold weather an increase in corn will enable the birds to maintain their body heat and to keep up the normal production. The feeding of hot mashes occasionally will also help.

The laying flock in winter should be made to take enough exercise to keep the body in normal flesh, a precaution which is especially necessary in keeping the heavier breeds such as the Plymouth Rock and the Wyandotte. It is better to make this exercise necessary by placing practically all the grain feed in deep litter on the floor of the house than to turn the birds out on wet snowy ground.

The health of the birds is best insured by keeping everything about the poultry house clean. The breaking out of head colds of a roupy nature in a flock during the winter will not only cut down the egg yields possibly to nearly half, but it will be a number of weeks before the condition is remedied. This and other diseases can generally be prevented by spraying the interior of the house and fixtures with a good disinfecting solution. A good mixture which accomplishes three purposes with one application, consists of lime to whiten the house, a disinfectant which will kill disease germs and kerosene or crude oil to kill mites.

Curing the Pork

This is something else that claims a good deal of attention on many Canadian farms this month. While brine curing and plain salting may be more convenient, there is a whiff of something

decidedly sweet and homemade in the sugar-cured hams and bacon. When the meat is cooled rub each piece with salt and allow it to drain over night. Pack in barrels, and weigh out for each 100 pounds of meat, 8 pounds salt, 2 pounds of brown sugar, and 2 ounces of saltpetre. Dissolve all in four gallons of water, boil, cool thoroughly and cover the meat with the brine. If the bacon strips are allowed to remain in this brine from four to six weeks, and hams from six to eight weeks and well smoked, there will be no difficulty in keeping them right through the summer.

* * *

The season of New Year resolutions is a good time to make a critical study of the systems you have been following during the year.

If you have never kept books of your farming operations this is the time to begin.

* * *

What new machinery for the farm and the house, do you intend to buy this year? If you decide early you will have more time to investigate, and see what make is likely to best suit your requirements.

* * *

This is a good time to study the nursery and seed catalogues and to make out your list for the spring planting.

* * *

Plan the drains you intend to put in this year. This is a job you want to have ready for the first slack season in the spring.

Mushroom Culture for the Amateur

The Care of the Plant from Spawn to Marketing

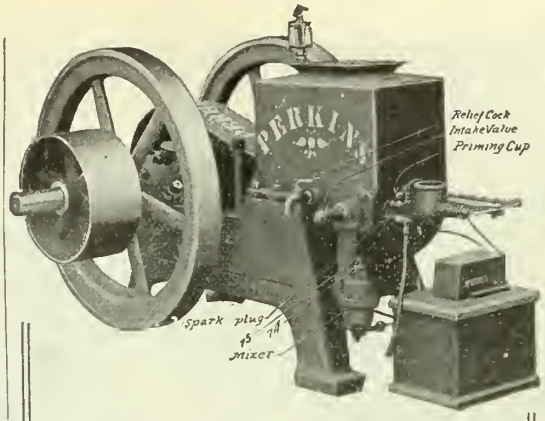
By H. F. EAST

As the culture of mushrooms by the amateur is rapidly increasing throughout Canada from year to year, and with the growing demand for this table delicacy, many of our readers will welcome an article giving practical, definite information how to grow a thriving crop of superior quality. Being a professional and practical gardener, Mr. East can be depended upon for reliable information.—Editor.

PERHAPS it would be scarcely accurate to say that the mushroom is universally esteemed in the mansion and in the cottage, but it certainly has many friends amongst all classes. Those who find or imagine they find that this delicacy does not agree with them, might possibly arrive at another conclusion were a different mode of preparation adopted or were the consumption of it accompanied with a full persuasion that the mushroom is not merely delicious in flavor, but thoroughly wholesome, rich in flesh forming constituents, and minerals. These facts have been clearly shown by a chemical analysis, and may dispose of timid misgivings. Hitherto the artificial production of mushrooms has never been equal to the demand. If, however, the large centres of population are inadequately supplied, the scarcity of mushrooms is more keenly felt in the province, except in certain favored districts, where after a few warm days in the fall a crop may be gathered from a neighboring pasture. Then there is a brave show in the market or in the store window of some greengrocer for a brief period followed by entire dearth for some weeks.

The idea that mushroom growing is somewhat of a mystery forbidden to all but the strictly initiated has happily been dispelled. If we examine the conditions under which mushrooms grow freely in pastures it is surprising how few and simple are the elements needed for success. The artificial production of mushrooms in the garden needs only reliable spawn, a sweet fertile bed, and some means of maintaining a steady temperature under varying atmospheric conditions. When the principles of mushroom culture are thoroughly mastered, they may be applied in many different ways, and they render the practical work easy and tolerably certain. Although the mushrooms may be grown from seed it is seldom done except for strictly scientific purposes. The seeds are largely disseminated by nature and if found a suitable home they germinate and produce an underground growth, which at a hasty glance resembles mildew. It really consists of white gossamer like films, which increase in number and distinctness as they develop until they push their way towards the surface and give rise to the growth above ground of the mushrooms.

What is called mushroom spawn consists of certain material from the stable and the field mixed and prepared in a way to favor the growth of the "mycelium" of the mushroom its appearance being that of an unburnt brick. The preparation of the spawn though a very simple matter demands the skill and care of experienced operators, for if the work is not well done the spawn will



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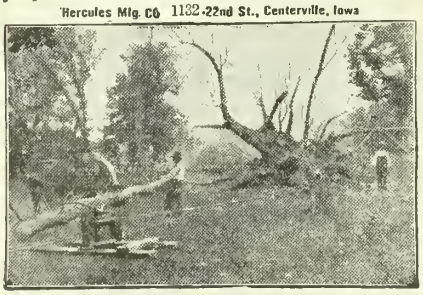

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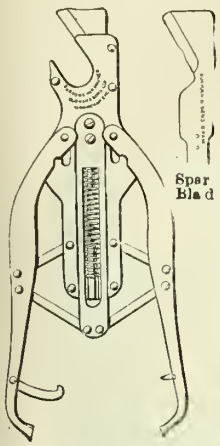
be of poor quality and will yield a meagre crop or perhaps fail entirely to produce a single mushroom. When the spawn is good it has but to be broken into lumps of a suitable size and inserted into a bed of earth of the requisite quality, to impregnate the whole body of earth with the necessary white threads. Experts can readily form an opinion as to whether a cake of mushroom spawn is or is not in a fit state for planting and it will be a safe proceeding for the amateur to buy from some house which has a large and constant sale, otherwise, spawn may be purchased which was originally well made and properly impregnated but has lost all its vitality through long keeping.

Fertilizing the Bed

In the management of the manure, two essentials must be borne in mind. Not only is nourishment for the plant required, but warmth also. Probably a large proportion of the failures to grow mushrooms might, if all the facts were known be traced to some defect in the manure employed, or some fault in its preparation. It must be rich in the prospects which encourage and support the development of the mushrooms and be free from the least bad odor, or smell, for the plant is most fastidious in its demand for sweetness, although it can dispense with light, and there must remain in the manure, when made into a bed, a sufficient reserve of fermentation to insure prolonged heat, no matter what the temperature of the atmosphere may be. Of course, the duration of the heat will depend very much on the care with which it is conserved by suitable covering and management. The work is more difficult and complicated on paper than it proves to be in practice. The manure should come from stables occupied by horses in good health, fed on hard food. The most suitable store is the floor of a dog shed or under some protection which will prevent the loss of vital forces. Ammonia, for example, is readily dissipated in the atmosphere or washed away by rain. The manure should neither be allowed to become dust-dry nor to waste its power in premature fermentation. Operations may be commenced with three or four loads. A smaller quantity increases the difficulty of maintaining the requisite temperature when fermentation begins to flag.

To Make a Bed

The first procedure is to make the manure into a high oblong heap, well trodden. If the stuff be somewhat dry a sprinkling of water over each layer will be necessary. In a few days fermentation will make the heap hot all through and then it must be taken to pieces and remade, putting all the outside portions into the interior. This process will have to be repeated several times at intervals of three or four days until the manure not only has been fermented but sweetened. When ready it



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will be of a dark color, soft, damp enough to be cohesive under pressure, but not sufficiently damp to part with any of its moisture, and almost odorless. At all events, the odor will not be objectionable, but may be suggestive of mushrooms. Make a long bed having a base about four feet wide, and the sides spoling to a ridge like the roof of a house. The narrow part of the ridge is useless so the top therefore should be rounded off when about a foot across. Some growers prefer a circular bed of six or eight feet in diameter at the bottom and tapering towards a point after the shape of a tent. Either the long bed or the round heap answers the best. Tread the manure down compactly and for the sake of appearance finish it off in a workmanlike way. During the first few days there will be a considerable rise in the temperature, which will gradually subside and when the plunging thermometer shows that it has settled down to a comfortable condition of about 80 deg. the bed must be spawned. Experienced men can determine by the sense of touch when the temperature is right, but the inexperienced should only rely on the thermometer.

Breaking Up Spawn

Breaking up spawn into pieces as large as a turkey's egg, and force them gently a little way into the manure at regular intervals of nine or ten inches all over the bed, closing the manure over and around each piece of spawn. The practice of inserting spawn by means of a dibter is to be strongly condemned, for it leaves smooth hollow places which arrest the mycelium and very small pieces of spawn should be avoided because they generally result in small mushrooms.

As soon as the spawning is complete and thick and even a covering of clean straw or litter of some kind should be laid over the bed. Within a week the films of mycelium will begin to extend if the spawn is good. In the contrary case an examination of the pieces will show that they have become darker than when put into the bed, which means that they have perished. Then the question will arise as to whether the spawn is at fault and the bed must be spawned again or broken up. Supposing the spawn to show signs of vitality the time has come for covering the bed with a layer of rather moist soil, pressed lightly but firmly on to the manure with spade or fork so that the earth will not slip down. At once restore the covering of litter, etc., and wait patiently for seven or eight weeks for the crop. Meanwhile the plunging thermometer ought to be consulted daily until the mushrooms appear. The instrument should not register less than 60 degrees. Experience proves that the most violent alterations of temperature may be combated by regulating the thickness of the covering. A rich firm bed that has been well managed in the fermentation will produce

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firm handsome mushrooms. A poor, loose bed will produce only lean and ugly mushrooms. It may happen in the first attempt that the mushrooms, or at least the temperature of the bed may through inexperience in the management of it, sink below the point at which mushrooms can grow, and then I advise the exercise of a little patience. But in the event of the first effort failing outright there is no great loss for the most costly item—the manure—will still be available for the garden and an observant man will pretty well understand in what respects he must amend his course of procedure.

Moisture is of great consequence, for the dry mushroom bed will soon be barren also, but whenever water is given it must be applied tepid from a fine rose can. To slop cold water over a mushroom bed is about as reasonable a procedure as putting ice into hot soup. Water is best applied in the afternoon of a genial day, and should be sufficient to saturate the bed. Immediately after it is done the covering of litter must be promptly restored to prevent the temperature from being seriously lowered by rapid evaporation. A couple of stakes driven through the bed at the time of making up are useful as indicators of moisture and may occasionally be drawn out and examined. In gathering a crop only a small portion of the bed should be uncovered at a time. This should be the rule at all seasons and the strictness of this rule will prevent a mistake in cold weather for when the bed is carelessly uncovered and much chilled the crop will soon come to an end. Another rule should be enforced to this effect, that every mushroom must be taken out completely and if the root does not come out with the stem it must be dug out with a knife. Any trifling with this rule will have to be paid for.

The facility with which mushrooms may be raised under simple methods is illustrated by practice of growing them inside the turf walls of cold pits. But mushrooms may be grown almost anywhere even in a cold cellar or on the wall of a warm stable provided only that the mode of procedure is in a reasonable degree adapted to the requirements of the fungus. Many gardeners obtain good crops in autumn by the simple process of inserting a few lumps of spawn in a cucumber bed while the plants are still bearing. Between spawning and bearing a period of six or eight weeks usually elapses.

Sheds and outhouses not only afford shelter and space for beds of the floor, but the walls may be fitted with shelves on which mushrooms may be grown as plentifully as anywhere else. Shelves should be two feet apart vertically and each shelf should have a ledge of nine inches deep.

In looking over our lives at the days that have been worth while, how many of them did money buy?

$1,000 For Country Teachers

(Continued from page 16.)

not many parents who would not prefer that their children should walk two or even three miles, rather than take a drive of that duration in the winter months.

It Would Rob the Rural Centres

But there was still another reason why the Consolidated School was doomed to failure, at least under the conditions existing in Canada. The neighborhood is a very real unit in rural society. The matter of distance determines its extent, so that it cannot extend for more than a reasonable walking or driving distance from its centre. In other words, the same factors determine the extent of the neighborhood as determine the size of the school section. It is no wonder then that we find the rural neighborhood centering around the local school. To place that school in the centre of a district eight or ten miles square was to destroy its value as a neighborhood centre, as well as to remove it too far from the outlying parts of the district to get that local interest which counts for so much in the country. It may be that a feeling that by consolidating the school sections the rural neighborhoods would lose something that by right belonged to them, had something to do with the facts that this idea never "caught on" with the people. Be that as it may, the movement for Consolidated Rural Schools is now as dead as a doornail.

But now a new plan for the improvement of the rural schools has been brought forward. We are told that the common schools have much to do with the trend of population from the country to the town. They have been "educating people away from the land." How the teaching of the subjects taught in the public schools can influence the child to choose medicine or law or business rather than agriculture, I for one cannot see. I had thought that these rudiments were equally appropriate for all walks of life. However, this objection is raised to our public schools, and there is a strong movement on foot to change our rural school curriculum so as to educate the children back to the land, instead of away from it. To this end increasing emphasis is being laid upon nature-study, school-gardening and agriculture. They are to be emphasized so that the children will become interested in the soil, and will choose farming as their life's work. Thus the rural schools are to be made an agent to stem the tide of rural depopulation, and to coax, cajole, and if necessary almost drive the children of farmers into following their father's calling. The rural schools are to be made to some extent at least, vocational schools. Coincident with this movement is that for manual training in the city schools, the object of which is undoubtedly not only the mental culture obtained by work at the bench, but the directing of the minds of artisans' children towards the workshop.

It does not require that one should be a prophet or the son of a prophet to see whereto this tends. In India they have what is known as the caste system. Each vocation forms a distinct society of its own, and the son absolutely must follow his father's calling. There is no such thing as a young man choosing his calling. He is born to his calling, and there he must stay. This system is one of the greatest evils in heathen India. We have of course no such thing here. Here every young man can choose his calling with perfect freedom. But once let vocational training be introduced in our public schools, and let us see what happens.

Let us suppose the teaching of agriculture is introduced in all seriousness into rural schools, and manual training into city schools used by children of artisans. To teach these subjects well,—and there is no use teaching them any other way,—requires time, a good deal of time. There is only one way that time for them can be got,—by curtailing the time devoted to other subjects. Thus the child must be older than he otherwise would be when he reaches the standard required to enter the secondary schools, older when he matriculates, and, should he choose a profession later in life when he begins work. No one can claim that this is not a serious handicap to the son of the farmer or the artisan who wishes to follow some calling other than that of his father. Give still more time to these subjects, and we have an almost irresistible force, not only of influence, but of compulsion, to drive the child into his father's vocation. Is it fair or right, is it in the interests of true democracy that any force, any influence should be used to direct the mind of the child, into any special walk of life? Should he not be left absolutely free and untrammelled in his choice of a vocation?

Till they reach the age of fifteen or sixteen, children live in a world of their own, a world largely made up of imaginings, of fancies and day-dreams, — dreams which rarely come true, but still are beautiful and bright and wholesome. They are as care-free and irresponsible as the birds, and generally as happy. They accept their parents provision without thought of where it comes from, and the thought of money rarely enters their heads. We all remember this magic period of early youth, when the sun shone more brightly, and the birds sang more sweetly, and the springing flowers were more beautiful than they ever have been since. When, in words of Kingsley:

> "All the world was young, lad,
> And all the trees were green,
> And every goose a swan, lad,
> And every lass a queen."

But into this fairyland of childhood comes the vocational teacher, with his questions of profits and loss, of methods and costs, and what happens? I will merely quote from an article written by a direct representative much in favor of teaching agriculture in rural schools:

"Who has the cow that gives most milk? I asked one school.

"Our old roan has the bunch licked," said one young boy.

"Huh! She's only a grade," replied a red-haired hopeful, minus two teeth. "Our pure-bred Holstein can knock the spots offer her."

"Please sir, I'll bet our new Ayrshire has them all stuffed," a little fellow piped up."

Leaving aside the question as to whether these young hopefuls would not have been better employed in learning to speak decent English, is it not all a pretty sordid business? Is it not a fair stretch of the imagination to see these boys, in their teens, full of thoughts of profits and loss and money-making, robbed of the happy irresponsibility of childhood, a lot of sordid little money-grubbers. Is it right so soon to turn their thoughts toward the material things that constitute the care of the adult world? They will have to take up the burden soon enough. Why not leave them free until their turn comes?

But there is no doubt our rural schools are capable of improvement, though my own opinion is that this improvement does not lie along the line of vocational training. As to nature-study and school gardens, they may be very helpful, if they are taught as recreative subjects, and are not allowed to interfere with the serious business of the school. This serious business is nothing less than the thorough and complete mastery of the three Rs. A child will learn to farm or make shoes after he has left school, but if he has not mastered the three Rs then, he will never do so. And more important than any other thing to him, are these fundamentals, for they are the golden keys with which he may unlock the great world of books, and make his own the knowledge and experiences of all past generations of men. High-school teachers constantly complain that the pupils coming up to them are ill-prepared, and know nothing thoroughly. Is it not possible that the public school curriculum instead of being too narrow and in need of additions, is too broad, and in need of pruning, so that the work may be more thoroughly done?

Only Five Per Cent. to High Schools

Up to the point where the High School Entrance Examination is reached, the educational requirements of the pupils who will enter the secondary schools and those who will not do so are the same. They are the fundamentals, which everyone must know. Generally, the work of the public school stops there. About 5 per cent. go on to the secondary schools. For the remaining 95 per cent. educational opportunities are ended. Many of these would undoubtedly go

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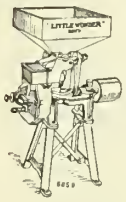

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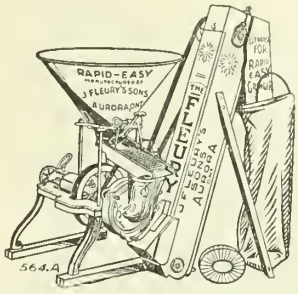

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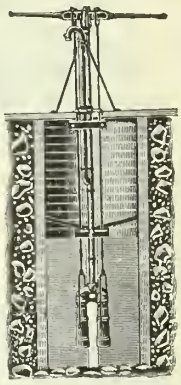

FIRST—There is no packing-box to cause friction and leakage, thereby stopping the force of the water.

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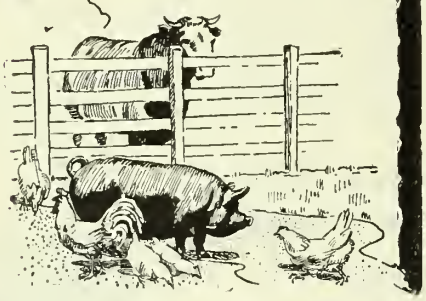

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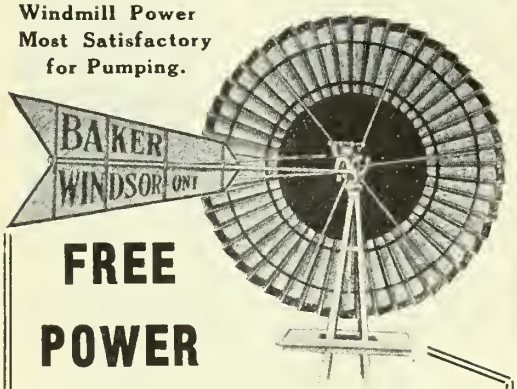

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further were it not that it requires considerable sacrifice and expense to send them. It generally involves the boy or girl leaving home and paying board in the town where the secondary school is situated. Many rural parents who would gladly have their children go further, cannot stand the expense necessary to send them, or shrink from allowing them to leave home at such an early age Should not something be done for these, in the way of continuation class? It seems to me that the work of this class might at the same time be made highly profitable to the pupils and not very burdensome to the teacher. It should not consist in teaching a poor smattering of languages and algebra and the sciences, which cannot be pursued far enough to be of any permanent value, but its aim should be to cultivate the habit of reading, to teach the pupil to formulate and express his own thoughts, and above all, to broaden his mind and set him thinking. Could not a course of say, two or three years be arranged, during which the pupil would read twenty-five or thirty standard English books under the teacher's supervision, write a good many compositions and essays, and take a little advanced arithmetic? Would not such a course impose very little additional burden upon the teacher? And would not the pupil who had taken it have a better furnished mind, and be better fitted to take a worthy place in the life of the community than many of those who have passed through the secondary schools at the present time? We have been fond of comparing our school-system to a ladder with its top in the university and its foot in the public school, but we have not provided landings for the great majority who never reach the top. Why not provide a landing where those who can go no further than our rural schools may get off and find themselves somewhere instead of nowhere?

Give the Teacher $1,000

But, to this, to make our rural schools an inspiration to thought and culture in the rural communities, we must have better teachers. At present of the 5,728 teachers of rural schools in Ontario, but 882 are men, and the rest are girls and women, most of them immature, many of them indifferent teachers, and very few of them expecting to remain in the profession for any length of time. They are, however, on the average, perhaps better than the men. Of the total number of teachers, more than half have third-class certificates or less, and almost a third have no certificates, or only a temporary one! We must have better teachers, but how can we get them?

If we could establish a minimum rural salary of say $900 or $1,000, we no doubt could get good teachers. For that salary we would likely get men who were not using teaching as a mere stepping stone to something else, but who would make it a life-work, perhaps married men, who would be quite permanent in their positions and would be real leaders in the rural communities. Then we might expect the rural public schools to be real educational factors. But again the question comes up "How can we get the money?"

Ask the farmer if he can afford to pay more taxes and he will tell you emphatically "No," and he has reason back of him. He is already about the highest taxed person in the community, discriminated against by our fiscal system, and with his actual investments yielding less than current rates of interest. In fact, so highly is he taxed that he is leaving the farms in thousands. But, as we showed in the beginning, it is the business of the whole community to see that the country-people have at least a fair degree of education, and the whole nation suffers if they have not. As a nation we apparently have money to burn. We can spend millions on absolutely useless public works. The Federal Government wastes enough in training a diminishing number of militiamen to pay fair salaries to rural teachers all over the Dominion. The money would give better returns spent in educating our country children than in a costly and useless headquarters staff. We can advocate trunk roads for automobiles, to be built at enormous cost; we can give millions to mendicant railway magnates; we can afford to build an enormously costly navy. Surely we can afford a few millions for the essential work of rural education. Even a little of the money that our Provincial Department of Agriculture spends in exhorting the stupid and unappreciative farmers to work harder and grow bigger crops, might be better spent in helping them to get a better education for their sons and daughters.

The best products of the farms of our country are the bright-eyed, vigorous rosy-cheeked children. Let us see to it that while we are preaching better cultivation for our fields we are not neglecting the cultivation of this most important crop of all.

The Voice of the North

Across the land stern winter stalks in snow-white gown and cowl,
While the frozen silence echoes to the coyote's distant howl;
But our way is ever onward, for the spirit goeth forth
To that alluring No-Man's-Land, the grim mysterious North.

It calls to those within whose veins the blood of vikings old
Is ever ready for the trail, the upward path and bold.
For them the North no terror holds: its fiercest mood is kin
To their deep elemental joy, which loves to dare,—and win.

—F. Haldane.

The Whirligig of Time

The Girl of His Heart Lived Next Door

By MARY ELEANOR ROBERTS

PETER DILLENBECK had sent for me to come to his office, and I dutifully went. The old boy had been my grandfather's executor, and when he told me that a forgotten box belonging to the estate had been knocking about for the last thirty years in the basement of the trust company, and that he wished to turn over the contents to me, I naturally pricked up my ears.

"Stock certificates?" said I hopefully, but he shook his head.

"Nothing but receipts," he answered. "The box was a pasteboard one and has fallen to pieces, but this may be of some value, and you will probably know who it is." He handed me a small, square leather case. I opened it, and within were two miniatures, facing each other.

"That's my grandfather," said I promptly. "We have a portrait like it at home. He was about nineteen when it was painted. But who is the lady?"

"Your grandmother, probably," said old Peter.

"Not much!" said I feelingly. "You remember my Grandmother Wickersham, sir. She was a Crackenthorpe of Wilmington. She had red hair. All the Wilmington Crackenthorpes have red hair."

"Maybe she dyed it," chuckled Peter. "Or the artist may have flattered her."

"Not he," said I gloomily, staring at the portrait which smiled back at me alluringly. "That's not Grandmother Wickersham's nose. I ought to know—I inherited it."

"She's a mighty pretty little lady, any way," said old Peter, looking at the picture appreciatively. "I thought you would probably recognize it, but you're too young. You're too young. Well, take it along, my boy. Sorry it wasn't securities." I was sorry too, but I pocketed the case and went home. I showed it to my sister Elspeth, but she had no solution of the identity of the lady to offer.

"I think it was highly improper of Grandfather," said she, "having himself framed up with a lady who wasn't his wife. A beauty, too! How could she manage to look pretty with those bunchy curls and a dress cut like that? Here's something scratched on the frame; 'Sic Donec.' What does that mean, James?"

"'Sic Donec,' 'Thus until,'" I translated. "That's the motto Grandfather always used. It's inside the case of his watch. What was he up to, I wonder, when he scratched it on this?"

We looked at each other and shook our heads solemnly. What he was up to, we would never know. "And so young, too!" said Elspeth reprovingly. "Why, he was married when he was twenty-one."

"And he was a bank president at twenty-eight," said I.

"And look at you James!" mourned Elspeth. "You're nearly thirty."

"I'm twenty-nine," I interrupted with some heat. "Things are different now. He was a rich man in his day. We have twice his income, and are almost poor. Maybe I have twice his ability, yet I'm a broker in an insurance office."

"Maybe?" mocked Elspeth. "Why you haven't even enterprise enough to get married!" Elspeth gives herself airs since she got engaged. She has red hair, like Grandmother Wickersham, and yet such is the change in fashions—she quite values herself on her looks and is considered a beauty.

"Any fool can get married," said I. "It's a wise man who knows when to stay single. Besides, the only woman I ever loved hardly knows I exist, and there are no others like her."

"Do I know her?" demanded my sister.

"You have met her."

"She's not marrned, is she?"

"Um'm. She's a widow," said I, and dropped the subject.

I set the open miniature case on my shaving-stand, and had opportunity every morning to study the two pictured faces. Young and handsome and debonair, they faced me fearlessly, as they had faced their unknown future long ago. It seemed rather pathetic to me and I felt old by comparison. Twenty-nine is not old, surely not, and yet I realized my limitations. I was no impetuous youth to marry before my majority, as my grandfather had done; to shoulder, like him, the responsibility of heading an important corporation, to act with decision in emergencies, and to inspire my household and large family with a wholesale fear of the Lord and of James Wickersham. In these days our blood was more sluggish, our wills less decided, our self-distrust more paralyzing. I was inclined to echo Elspeth's remark, "Just look at you, James!"

It may be that Elspeth's desire to see me married and settled was not entirely disinterested. She hadn't the heart, she explained to our various relatives, to leave the poor dear all alone, and how could she marry with a clear conscience unless she saw prospect of a suitable companion for James? Under Elspeth's conventional feminine exterior was a profound conviction that a man left to himself was a ship without a pilot, and she probably anticipated that, lacking the controlling influence of her guiding hand, I would marry the cook. She therefore continued to spread the net in the sight of the wary bird. She delicately extolled in turn the attractions of all the unmarried girls of our acquaintance, beginning with our next-door neighbor,

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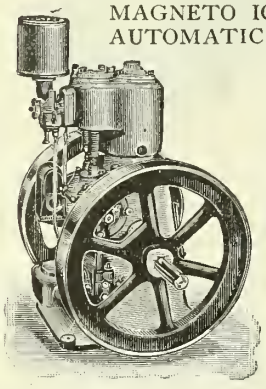

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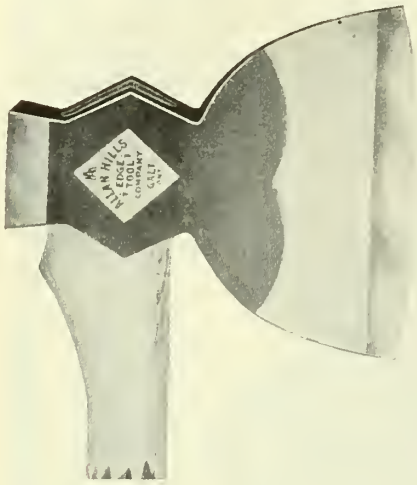

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Betty Chisholm. "I know them all too well," I objected. "There is nothing interesting or unexpected about them." This remark apparently set Elspeth thinking, and the result of her cogitations was disclosed on our way to the Hamilton wedding.

"I am dying to see the girl Gertrude has asked to be maid of honor," said she. "She is a raving, tearing beauty from New York. Only, I think it is rather hard on the other bridesmaids. Of course they can't come up to her."

"Who are the others?" I asked.

"Betty Chisholm is one."

"Well, Betty's all right," said I.

"Why, yes, of course she's all right," agreed Elspeth. "And if the dress is becoming to her, she will look very pretty. But this girl, they say, is extraordinary. Every other man she meets proposes to her."

"And you wish me to be one of the every-ones?" said I. "I told you my affections were engaged."

"You talked some nonsense about a widow," said Elspeth somewhat sharply, "but I thought you were in fun."

"I assure you, I was never more serious."

A worried look came into my sister's eyes. "Would she be a—a suitable match?" she asked hesitatingly.

I threw back my head wit ha roar of laughter. "My dear girl, you have match-making on the brain. I have not the faintest desire to marry, but I am quite serious when I say that I have met a lady whom I honor and admire above every one else. She couldn't marry me, for she is as far above me as a being from another world; but if I could meet some one like her, I might think about it."

At the wedding-reception I was duly presented to the imported maid of honor. She was beautiful—overwhelmingly so. Her beauty was the only thing you could think of in connection with her, just as some people are so rich that no other attribute attaches to them. Withal, she apparently set a proper value on masculine admiration, for she was graciousness itself. Even with three others claiming her attention, she still kept a detaining word and glance for me, and was manifestly an adept at driving four-in-hand. It was with some difficulty that I escaped, and took refuge between Elspeth and Betty Chisholm.

"Well?" they breathed. "What do you think of her?"

"I'm dazzled," said I. "I'd like to look at you two for a change."

Betty flushed. "I don't think that's a very nice speech," said she.

"Well, what do you think of her, Betty? Elspeth wants me to marry her."

"I think she's wonderful," said Betty softly. "I'd like to look like that. Oh, not for always, you know! Just for a couple of weeks, to see what it feels like."

"Well, if one could marry her for a couple of weeks, it might do," said I. "But why should a man who is an ordinary sort of fellow want to be tied for life to a diamond tiara like that? I couldn't afford to keep my wife in a

jewel-case and only take her out on opera-nights."

Elspeth had drifted away, and we were alone.

Betty brightened. "But don't you like to look at her?"

"No, I don't, for she is always looking to see if I am looking at her. You can't catch her unawares. Her eyes are too big, any way. They look as if she had borrowed them from somebody else."

It struck me, as I spoke, that Betty was not looking her best. Perhaps, as Elspeth had suggested, the dress was not becoming to her, or perhaps her eyes were a little red.

"Elspeth says that you don't like any of the girls you know," she remarked casually. "She says you told her something about a widow."

"Elspeth is an atrocious chatterbox," I snapped. "I wish she would let my affairs alone." Then I cooled down. "I have a miniature of a mighty pretty girl at home, though. I'll show it to you some time. Some one my grandfather was in love with."

"Your grandfather!"

"Yes, I'm looking for some one that looks like her. But what's the matter with you, Betty? Are you tired? You don't look cheerful enough for a wedding."

Betty pulled at her flowers. "I don't like weddings," she said. "I think marriage is an awful responsibility. I don't see how anyone can undertake it."

"It's more of a responsibility for a man," said I lightly. "How much do a girl's clothes cost? I shouldn't want to undertake it, either."

Betty looked up, and I saw that her eyes were full of tears.

"Why, Betty," I stammered, "you are crying! I haven't seen you cry since we used to play red Indians and I threatened to scalp you. What's the matter, dear?"

Her face crumpled in a sob. "Oh, Jim, I've been with Alice Henderson! Her baby died yesterday morning. I shouldn't have come to-day if they could have found any one to take my place. I never want to love any one or anything, if I have to feel like that!"

I walked home rather thoughtfully. It struck me that perhaps I did not know Betty so well, after all. Up in my own room, the miniature smiled rosily from its frame. "I wonder what you learned about life, little lady; or perhaps you died and did not have to learn. That was it, of course! You died, and Grandfather married somebody else. I wonder if you wore that dress every day, or only when you had your picture painted. I wonder if you would have cried about another woman's baby. I rather think you were a heartless little flirt, but till I find some one I like better, I will keep you for my sweetheart."

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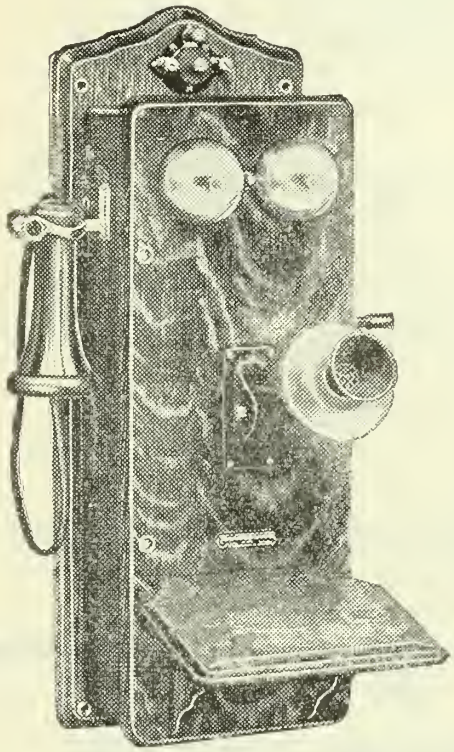

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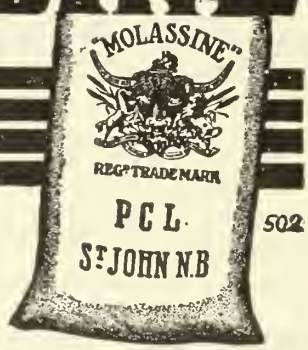

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THE SHAW CORRESPONDENCE SCHOOL, TORONTO.
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Perhaps it was a wish to prove to myself that I was still young that prompted me to accept the Hornaday's invitation to their fancy-dress ball on New Year's Eve. Dances bore me nowadays, but Elspeth insisted that I should go, because she was determined that I should wear Grandfather Wickersham's court suit. I think she wanted it known that she had had a grandfather who went to court. She helped me to dress, buttoning the brocade waistcoat and adjusting the high stock and lace cravat. I was desparately uncomfortable. Talk of modern degeneracy! Either our ancestors were much slimmer than we are, or they wore their clothes too tight. Elspeth hovered about me with real enthusiasm. "James, you're a dream!" she cried. "But don't for goodness' sake, sit down until I get into my gown. My hair is done, and I won't take long. Your things are awfully tender, you know, and I had to darn two holes in the silk stockings."

"I'll have to sit down in the carriage, won't I?" I protested.

"Well, I don't know," said Elspeth thoughtfully. "I should think you might stand or crook over just a little; but don't you dare move and spoil yourself now, till I get ready." So I stood forlornly in front of the shaving-stand, and the miniatures smiled approval at my costume. I picked up the case and gazed at the glowing little beauty. "If you're my lady-love," said I gaily, "I'll take you with me;" and I slipped it into an inner pocket.

The Hornaday dance was in a hotel, and I felt less like a fool than I had expected when I got there, for every one else was in some outlandish make-up. There was no masking, but the costumes and strange hair-dressing made it difficult to recognize people. Elspeth's fiance claimed her at once. I didn't care to dance, and was rather bored when, looking across the room, I saw the loveliest lady in the world being piloted to a seat. I hadn't expected to see her. She was not in costume—of course she wouldn't be—and her gentle distinction made the revellers look cheap. She sat and watched the dancers with that smile of hers which is like a benediction, and because I always feel blessed and purified when it rests on me, even though, as I told Elspeth, she is hardly aware of my existence, I started across the room to do homage and obeisance. People got in my way, and my progress was slow. The Father of the Country, in the person of Tom Parker, buttonholed me, and I could not shake him off.

"Excuse me," said I, "I wish to speak to a lady across the room."

"You're very eager," said he. "I didn't know you were smitten. Take me with you. Which is she?"

"The most beautiful woman in the room," said I irritably, "and the most heavenly-minded." (I didn't mean to

say that; it just came out.) "She's the only woman I ever loved. She's eighty. Mrs. Chisholm."

"Oh, I say!" cried Tom, staring.

She sat and watched the dancers with that lovely, dreamy smile; she had taken off her gloves, and her soft white hands were folded in her lap, glimmering with quaint, old emerald rings. When I finally reached her, bowing low, she looked up, and her recognition was swifter than usual. A flash came into her eyes. "Jimmy," she cried softly, "Jimmy Wickersham!" Then her look changed. "Jimmy Wickersham's grandson!"

"Yes, dear lady," said I. I raised her hand and kissed it. These are Grandfather's clothes, you know. And how lovely you look! You are the most beautiful woman here."

She laughed softly. "I suppose you wonder what an old woman is doing at a ball. I wanted to come. I had my maid bring me. Harriet wouldn't come." Harriet is an unmarried daughter who lives with her. She is homely and given to all good works. "It's a pretty sight, Jimmy. I beg your pardon for calling you Jimmy. You remind me of your grandfather. Have you seen little Betty?"

No, I had not. I had not seen her since the day of the Hamilton wedding. "You haven't seen little Betty?" said her grandmother. "Betty!" she called.

Suddenly the girl stood before me, softly smiling. Her hair was gathered in little bunches of curls above her ears, her white, narrow-waisted gown was cut off the shoulders in a deep curve, she held a small round nosegay in her hand.

"Well, James," said she demurely, "won't you speak to me?"

"But you are the lady," I stammered —"the lady in the picture. Who are you?"

"I'm Grandmamma," she declared saucily. "Wasn't she pretty?"

I thrust my hand into my breast and pulled out the miniature case, opening it with a shaking hand.

"Who was this?" I cried. "Mrs. Chisholm, you can tell me."

She took it from me. "Yes, my dear, it is I," she said gently, and apparently unsurprised. "So Jimmy kept it, after all! I used to wonder what became of it."

"But you didn't marry him," I stammered.

"No, my dear, I didn't marry him. I gave him back his ring. He threw it out of the window, and I found it the next morning. I have worn it all these years. I should like to keep these pictures, Jimmy. You will let me have them, my dear? And I'll give you back the ring." With some difficulty, she drew a ring from her finger—a square emerald set deep in diamonds.

"But, Mrs. Chisholm," I stammered, "what am I to do with it?"

She smiled like a pleased child. "Give it to Betty," she said.

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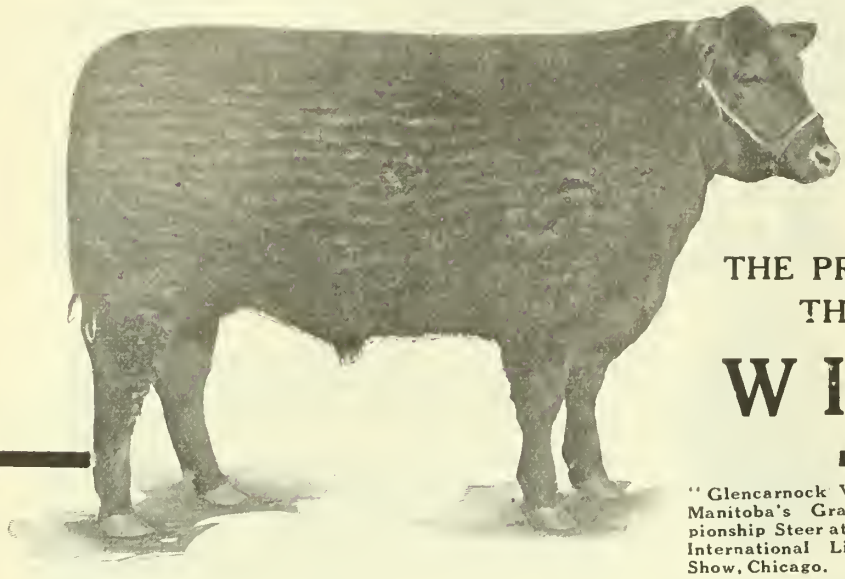

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I started and looked at Betty. She flushed and glanced down. We seemed to be acting a part and to be carried along with no will of our own.

Mrs. Chisholm laid a hand on each of ours. She spoke with the serene obliviousness of convention which sometimes comes with extreme old age.

"You must hurry, children. Life is short. I know. I have lived it. Give her the ring, James. And don't be too firm a man, dear. It is well to yield a little sometimes. Your grandfather would not yield."

I stiffened myself. "Will you take it, Betty?" said I. "You must take me with it;' and I slipped it on her finger.

She snatched it off again immediately; then held it close to her face, examining it. "Oh, there are initials inside," she said, "and a motto. 'Thus until.' What does that mean?"

"It means that now's the time," said I firmly. "Put it on again at once;" and, to my surprise, she did so.

"I wouldn't accept you, James, if it wasn't for Grandmamma," she protested. "I'd do anything in the world to give her pleasure."

"I can never love you as I do your grandmother," said I. "But to think you were living next door all the time. and I never knew you until now! And you are the picture, and your grandmother, and yourself. Oh, there's a lot to talk about! Come outside somewhere, won't you? It's hot in here."

It Came Back

A bird dog belonging to a man in Mulvane disappeared last week and the owner suspected it had been stolen. So he put this "ad" in the paper and insisted that it be printed exactly as he wrote it:

LOST OR RUN AWAY—One livver culered burd dog called Jim. Will show signs of hyderfobby in about three days.

The dog came home the following day.

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• • •

"After you," will unravel a crowd quicker than any pushing to be first.

• • •

Some people hold the key to the situation and then are too lazy to turn it.

• • •

The men who talk most about genius are the men who like to work the least.

• • •

A home without books, periodicals and newspapers is like a house without windows.

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When a wind-storm sweeps the country, it is the weakened trees, those with rotten hearts, that fall.

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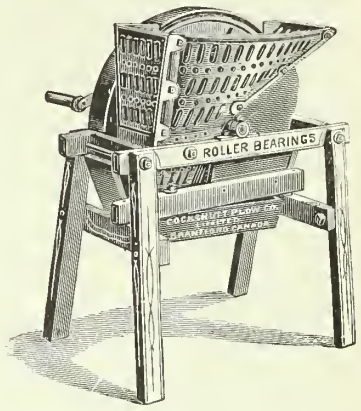

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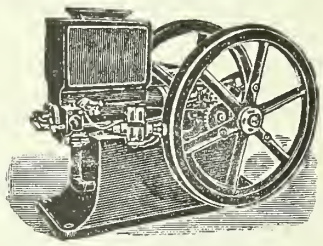

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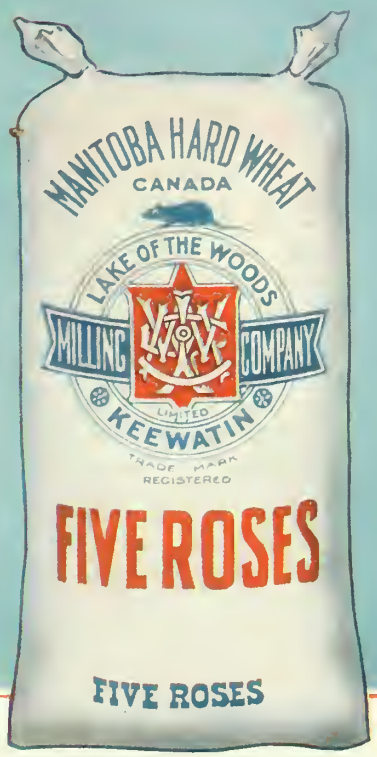

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THE FARMER'S MAGAZINE

February 1914

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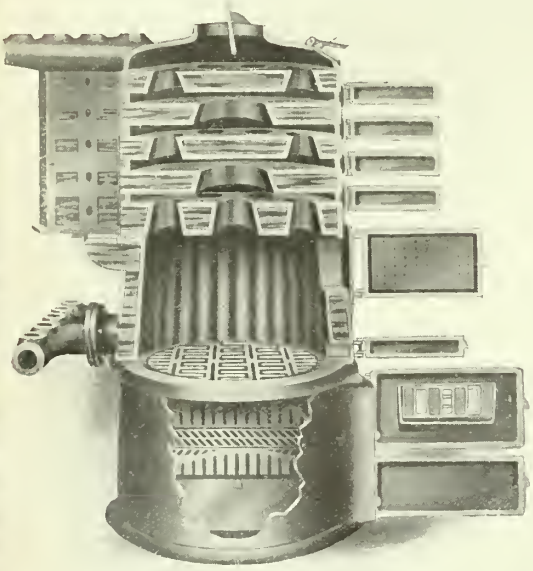
Why the "Sovereign" Hot Water Boiler has an unusual Heating Capacity



1913-1914 model "Sovereign," showing large-flared flues.

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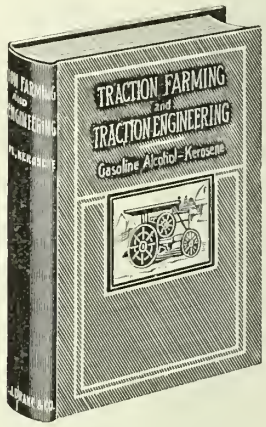

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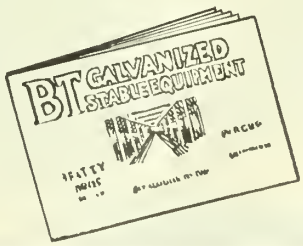

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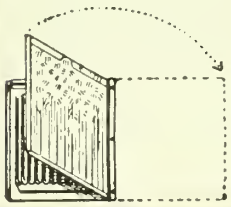

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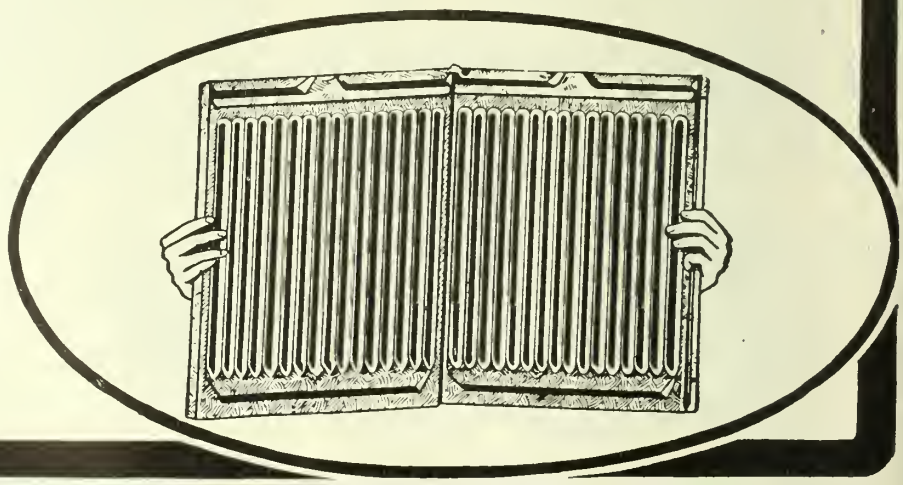

FARMER'S MAGAZINE

JOHN BAYNE MACLEAN, President
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FEBRUARY, 1914

F. M. CHAPMAN, B.A., Man. Editor
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FORECASTS OF A FEW THINGS FOR NEXT MONTH

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As one reader of Farmer's Magazine put it—"I like Farmer's—it gets you somewhere." The articles on agricultural subjects carry information. They explore the whole field of the question under discussion and give to the reader something more than mere hearsay or an isolated experience.

In next issue, the second issue of Prof. H. H. Dean's Dairy Series will hold your attention just as the first one has done in this number. These are really unique in themselves.

"How the Pay-Streak Pans Out," —in the March number, will interest every farmer who is specializing in the intensive crops. It matters not whether the farm is raising Runner Ducks on its marshlands or Greenhouse Tomatoes under glass, the inspiration of this "Miller" article will be welcomed by all.

Does cultivation of the cornfield pay in more coin? One writer in the March number says the only advantage of cultivation lies in the Weed destruction. Do you believe it?

Are you building a new house or re-building your old one? The house plans in each issue will be of inestimable service.

Other March surprises are in store in this issue:—Gardening, Poultry-Raising, Live Stock, Roses, Alfalfa, Lightning Rods, and Apples form the basis of extra good articles in the next issue.

No farmer who believes in his profession can be without the Farmer's Magazine on his library table. A man is known by the company he invites to his home.

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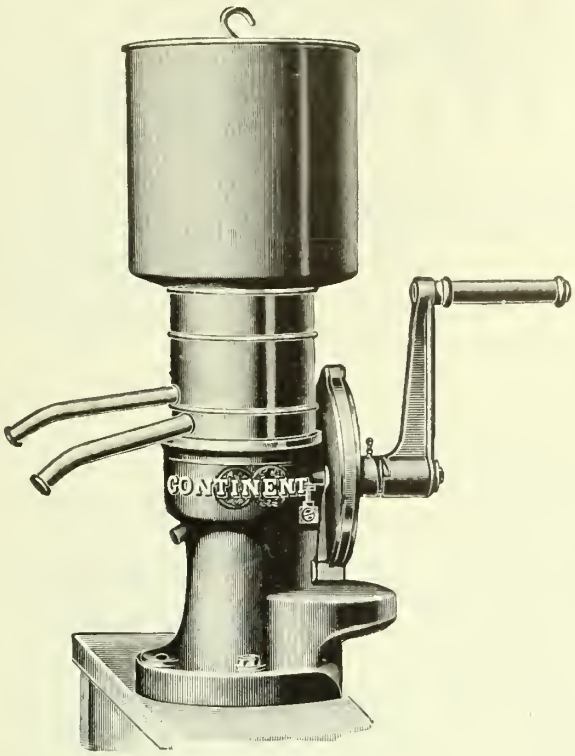

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The FARMER'S MAGAZINE

Vol. VII

February, 1914

No. 4

Billy Angora—Money-maker

Opportunities Open to the Man who Owns Slash Farms, to Increase His Returns

By GEORGE HAROLD DACY

Ideas are the most valuable assets of any farmer. Some men naturally have whole trainloads of them. Others are deserts and grow nothing. Yet soil can be carried to desert places so that it will blossom as the rose. So with the farmer on a poor farm. It is a chance for ideas. And ideas often come from others through the Farmer's Magazine. In this article, many a man will find many useful ideas and the possibilities of these may become actualities. The writer is an experienced farmer and one whose writings have already given enthusiasm and encouragement to many farmers.—Editor.

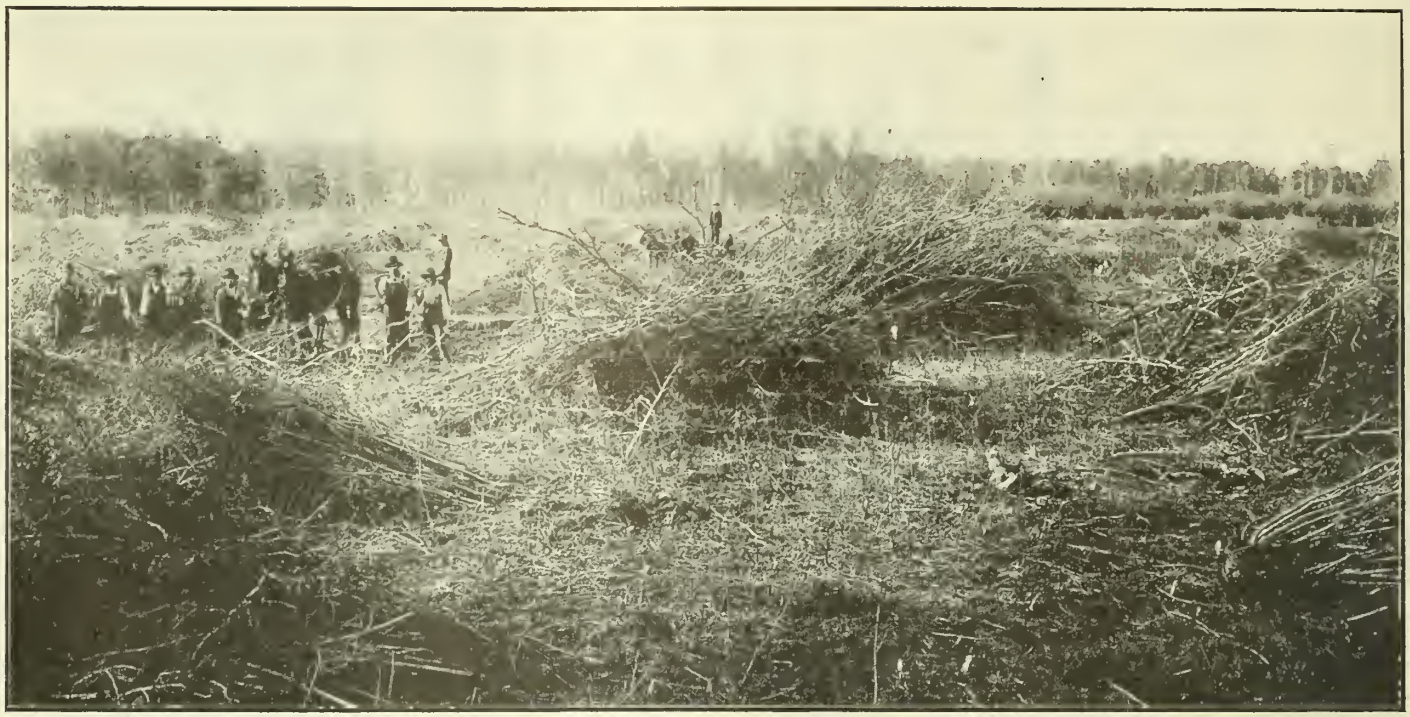
WHEN MOHAIR sells for $6.50 per pound, Billie Angora is a much respected goat. He is head and heels above his back alley cousin, the unfortunate billy-goat whose chief ambition in life is to escape the disgrace of having a tin-can tied to his tail. Billie and Nannie Angora are the elite of Goatdom. Their rights to aristocratic tendencies hinge around the fact that they are boss cleaners-up of waste, brush-land, that they are deathly enemies of weeds, that they are prolific dispensers of fertility wherever they go and that they are beautiful producers of costly mohair and good quality meat.

Don't think that all mohair brings $6.50 a pound. This is a record price recently paid to a goat-man who marketed forty-two pounds of remarkably fine and long mohair. The average price of one year's growth of mohair ranges in the neighborhood of thirty-five to fifty cents per pound. However, for extra fine fleeces bumper prices are paid. At one time Mrs. M. Armer of New Mexico realized $43.00 from the sale of fourteen pounds of mohair sheared from a single doe. Some of this mohair was as long as eighteen inches. It was used in the manufacture of wigs, switches, nets, ornaments and the like. About the same time Mr. Thomas Wedgewood of New Mexico obtained $42.00 for sixteen pounds of mohair which he sheared from one buck.

Angora Goats clear land, make mohair and meat, and improve soil fertility simultaneously.

Billie Angora is not only a Jack-of-all-trades but apparently he is also a master of everything he tackles. He is good as a yielder of wool and meat, better as a miniature manure spreader on legs, and best as an out-and-out enemy of underbrush and foul growth of all kinds. Billie is not particular or discriminating when he attempts the job of cleaning up a field. He begins at one end and works to the other, then back again; perhaps he then makes a round trip sidewise of the area. And when he gets through the field is fairly clean and ready for a crop of corn. What the woodsman with his ax and stump-puller is to the wooded regions of the Northwest, Billie and Nannie Angora are to the Southwest and parts of the eastern United States. They believe in the reclamation of idle, loafer land that is still, or is returning to a wild state.

There are more than one and one-half million Angora goats in the United States that annually produce about five million pounds of mohair. The average doe will shear about eight pounds of mohair per year while the ordinary buck will yield from ten to fifteen pounds. This mohair will be from eight to ten inches in length. Usually the goats are shorn in the spring of the year, but in the case of animals that produce exceptionally fine fleeces the owner may by careful management, be able to get the goats to hold their fleeces for eighteen months in which case longer and more



Slash land on the farm of Mr. E. Paige, three miles south of Gladstone, Manitoba. Goats would have a picnic in these grounds.

valuable mohair is produced. Considering the yearly income that Angoras return to their owner the original investment even for purebred animals is not excessive. Full blood bucks cost from $10 to $50 apiece, while mature does of pure breeding from $8 to $20 per animal.

However, the average farmer who only wishes to clean up a woodlot should preferably purchase grade Angoras which will answer his purpose just as well as purebreds and which will be much cheaper. Goats of this character can be obtained at from $2 per head upwards. Recently I purchased a number of does and several bucks at an average price of $3.33 per animal. The factor of prime significance relative to goats is that you do not have to feed them during their residence on your farm unless you are raising purebreds or unless the supply of available bushes and scrubby growth is very limited. The animals forage a living and clean up the land at the same time. They will return to you a triple profit, in-as-much as they will increase the value and improve the fertility of the land, while they will yield a profitable fleece and a desirable quality of meat.

Angora goat meat is in demand on many markets where it is preferred to lamb or mutton on account of its sweet flavor and tenderness. Goat meat sells for four to six and one-half cents a pound on the hoof. Goat meat is better than mutton for salting down for winter use as it contains less fat, is more easily kept and is just as palatable. On some markets the meat is sold as mutton and the consumers are never the wiser. A unique use to which Angoras are put in some localities is worthy of mention. This consists in the farmers employing the purebred goats as substitute grass-seeders in sowing their land. Each week they feed the animals a little grass or clover seed in their grain, the seed passing uninjured through the digestive and eliminative systems of the goats and being uniformily distributed in the manure. Fine stands of grass are obtained in this way.

Good Weather Experts

As predictors of approaching storms Angora goats are "boss" weather experts. The natives in many sections where the goats are popular have no need for barometers. All they have to do is to watch the goats. The animals scent the approaching storm and seek shelter as they abhor damp and wet weather. Goats are susceptible to pneumonia and foot rot and usually succumb to these diseases where they are maintained under bad climatic conditions, or where they are kept on low, poorly-drained land. Whenever you see a flock of goats heading for shelter even though the day be bright and sunshiny look out for sudden squalls as bad weather is approaching.

Angora kids, Nannie Angora often bears twins and triplets.

The fundamental utility of the grade and crossbred Angora is along the line of clearing land of wild growth. Naturally Angoras are browsers. They will grow sleek and fat an scrubby, second-growth timberland whereon ordinary range cattle or rustling sheep would almost starve. Give Billie Angora his choice between a thicket of bushes and underbrush and a nice range of meadow and invariably he will select the brushland as his stamping-ground. On account of their appetite for twigs and leaves of bushes goats are a great nuisance in the orchard or garden or wherever desirable shrubbery is grown. The United States Department of Agriculture reports that "in their efforts to get at leaves and twigs goats will stand on their hind legs and strip saplings to a height of five or six feet." The notable factor about the value of the goat in cleaning up land is that the animals do the work gratis, that is, they do not even ask for grain or rough feed or any care or attention during the entire year. They live and wax fat on weeds, twigs and leafy growth.

Clean Up Rough Lands

To kill out the roots of brush it is necessary to keep the goats on the land for two or three years. A good plan is to rotate the animals from one small field to another. As soon as the vegetation in one field is exhausted change the animals to another, shifting them back to the first field again when it shows evidences of decided growth. Goats eat hickory, alder and pine but they do not relish them as much as they do broom sedge, which is one of their favorite delicacies. Remember that the bush-destroying habit is common to all kinds of goats but that the Angoras are used principally for this purpose because they produce profitably mohair and meat

at the same time that they are subduing the wild land.

Some claim that the game flavor so pronounced in the case of Angora meat which is known as "Angora venison," attends the browsing characteristics of the breed. Do not believe the man who tells you that goats will prosper on any kind of brushwood or poisonous plants. On a Pennsylvania farm a flock of hungry goats was turned into a pasture where there was considerable laurel. The laurel was about the only green food in sight, so the goats ate it. Next day fifty of the animals were dead and three hundred others were very sick. Another enemy of successful goat-feeding or raising operations is the greenbrier. The fleeces of the animals get caught on these wiry, climbing shrubs and the goats are hopelessly imprisoned until either some one frees them or else the animals die. These briars should be cut down with a bush scythe before the goats are liberated in the field. It is not extravagant to say that goats prefer any kind of browse to the most nutritious and succulent of grasses.

Protect Sheep from Dogs

As a rule goats are dog-proof as they willingly wage battle with any stray members of the canine family that trespass on their domain. On this account it is feasible to keep a few goats with a flock of sheep as protection against stray curs. Where brushland is fairly dense seventy-five to one hundred goats to twenty-five acres will effect wonders in clearing the land. The number of goats to an acre of land depends on the quality of the wild growth, whether the purpose is to kill out the bushes or to use the land as permanent goat pasture and upon the value of the land. In the case of valuable land it will pay to use more goats and to clear the land as soon as possible, so that it may be worked into shape for cultivated crops.

The history of the Angora goat explains the predilection of the animals for high, and rough land. The vilayet of Angora in Asia Minor is the land of nativity of Billie and Nannie Angora. In this mountainous province with its numerous valleys the breed attained perfection. The fine hair of the goat is attributable to some peculiarity in the atmosphere, as it has been noted that cats, dogs, sheep and other live stock of Angora also evidence a similar fineness of coat. Good food and care also play an important part in the making of fine fleeces. That is why the breeders of purebred Angoras devote so much time and attention to their animals.

For decades the Angoras were bred pure in their home country. A big demand for raw mohair sprang up through extensive trade with Europe. In consequence native goatmen began to cross their purebred Angoras on the common Kurd goats. As a result of these extensive interminglings of family and blood Angoras of every variety were produced. That is why at present the breed shows lack of uniformity. Common characteristics of the modern Angora show that both males and females have horns and beards, although occasionally an animal without horns may be seen. The males' horns are about twenty inches long and turn upward, outward and backward, while those of the female are only in the neighborhood of eight or ten inches long, and grow upward and point backwards with only a slight inclination to twist. According to experts the "body should be round and broad throughout its length; hips and shoulders should be of equal height, as low shoulders indicate a delicate constitution. The chest should be broad, while the legs should be short. The head should be broad and should feature a wide muzzle, bright eyes and ears that are partially upright or distinctly pendent. The fleece should cover all parts of the body except the upper part of the legs. The fleece should make an annual growth of not less than ten inches and should be dense upon the animal so as to yield from four to six pounds of mohair. The ideal animal should present a fleece free from kemp, a kind of white, stiff hair that appears on the goat and attains a length of from one-half an inch to four inches. The offensive odor prevalent with common buck goats is present only during the rutting season in the case of the Angora. The odor in a fleece of mohair is milder than that in a wool fleece and is in no respect offensive."

The word mohair is derived from the Arabic "muhkayyar" meaning goat's-hair cloth. The average fleece is pure white and is extremely lustrous. The grade of the goat has much to do with the weight of the fleece. The first cross of an Angora buck upon a common doe yields only a small amount of mohair, but as the crossing is continued the weight of the fleece increases. Usually the mohair becomes coarser as the animals grow older. On an average the Angora goats in the United States annually produce per animal from three to five pounds of mohair that is about eight inches long.

Favorite soil for Angora goats.

Angora buck and two does.

Individual goats of high breeding shear eight to twelve pounds and yield a fleece that is twelve to eighteen inches long. In the warmer sections of the country it is necessary to shear twice a year, as otherwise the goats shed part of their mohair coats.

Mohair is used in the manufacture of plushes, dress goods, carriage robes, couch covers, sofa-pillow covers, coats, coat-linings, table covers, etc. It is also worthy of mention that the skin of the Angora makes a handsome rug if the goat is killed when the coat is about four inches long. Angora rugs sell for from $4 to $8 a piece. Durable carriage robes are made from these skins. The skins are used largely in the manufacture of childrens' muffs and as trimmings for coats and capes.

The Angora is not a liberal milker, and in no wise equals the flow of the average milch goat. The milk is particularly valuable for infant-feeding in-as-much-as the animals are practically immune to tuberculosis. Goat's milk contains about twice as much fat and one half as much sugar as does cow's milk. The Angora withstands a wide range of heat and cold. Practically any kind of a soil except wet, swampy land is suitable for these goats. Angoras are good mothers as well as being prolific breeders. Twin kids are not at all uncommon. There are millions of acres of brushland in Canada and the United States that could be vitally increased in value were flocks of Angora goats allowed to operate over the areas for a couple of seasons. The individual owner who possesses land of this character should investigate the efficiency of the goat as a land-reclaimer.

The Future of the Milch Goat

By E. I. FARRINGTON

SWITZERLAND, a country which would be lost in almost any Canadian province, produces 20,000,000 gallons of goat's milk annually. In Germany, the milch goat industry is worth over $35,000,000 a year outside the value of the flocks. France has goat dairies even in Paris. On this side of the water the milch goat has been neglected to a surprising degree, but of late years much interest in raising goats for their milk has been aroused. The great difficulty has been in getting good stock, but it has been found that common goats crossed with imported bucks from heavy milking strains will yield almost as much milk as pure-bred does, and a number of excellent dairies are being built up in that way.

The best bucks to use in this part of the continent are Toggenburgs and Saanens, both Swiss breeds. These are hardy goats and easy to keep. It is often possible to buy a grade doe or a common doe which has been bred to an imported buck. Two does will keep a family in milk the year around and at very small cost, for which reason milch goats are well worth the attention of people living in villages and suburban sections. Does are kept within the city limits of Buffalo and trouble no one. Milch goats have no ill odors, except the bucks at certain seasons. They are so cleanly that they will not eat food which has been soiled in any way.

The cost of keeping a milking goat is hardly more than a dollar a month, and is much less when the animal may be tethered or yarded on a grass plot in summer. Hay and a very small amount of grain is given in winter.

Goats which yield two and three quarts of milk a day are to be considered very satisfactory. Records of five and six quarts are not common, but two quarts will be enough for the average family, and the cost is seldom more than five cents a day,—two cents and a half a quart. Goat's milk is different from cow's milk in several ways, and is much more digestible. Physicians and hospitals commonly pay 25 cents a quart for it.

Anything new in the pasture is examined with interest.

Goats are very friendly and tame. Also, they are very curious, and if any thing strange is found in their pasture, they examine it with the greatest of interest. They are almost as valuable as Angora goats for cleaning up waste land, but only a high and stout fence will confine them and they are nimble climbers.

A small house will furnish winter quarters for them, but it must be dry. In some dairies the tiny stalls are a foot or more above the floor and the little animals seem to enjoy being on these elevations. When the animals are milked, the man doing the work simply sits on the edge of the stall platform. Milking is usually done from the side instead of from the rear, as in some foreign countries. When the stall is not raised, it is a common plan to have a platform for use at milking time. The goats mount the platform freely enough, especially if they are fed something while there, and only a few minutes are needed for drawing the milk. There is no reason why milch goats of the hardier breeds, such as thrive in Switzerland, should not be kept in Canada and prove of as great value as in other lands.

Making Good in 12 Years

An Ontario Farmer who Lives Well and has Cleaned up a Fortune by Intelligence and Business Sense

By TOM DOBBIN

"It's no trick to get on for the fellow who has a start given him. The man that can't make good when his father leaves him a farm clear has missed his job. It's different with the man who has to earn everything himself."

This was the sentiment expressed by Chas. A. Wilkinson, of Wentworth County, Ont., about twelve years ago. He was then on a rented farm. He still owed his father a few hundred dollars on the chattels that formed the stock in trade of his farm. However, he was blessed with good health and an almost limitless capacity for work. Apart from his inborn gumption and love for the farm, his main asset was his wife, a woman who has stood by her husband in as gallant a fight for farm prosperity as has been fought out on the soil of old Ontario.

About a year after Mr. Wilkinson made the foregoing remarks he bought the farm that he had rented. He owns it now. On it he has put up a fine farm house, a splendid barn and a good driving shed. He has his farm well supplied with up-to-date implements, a good windmill, serviceable horses, a good herd of grade cows that have been carefully selected, and a few fine hogs, while Mrs. Wilkinson is the proud owner of a splendid flock of thirty geese, to say nothing of about a hundred hens.

Mr. Wilkinson makes truck-farming the backbone of his work. In this speciality he has been unusually successful. For instance, for eight successive weeks in one season he has banked one hundred dollars per week from his garden. One year he sold fifteen hundred dollars worth of potatoes in baskets before the demand came for the sale of potatoes by the bushel. In many ways his farm is adapted for this sort of industry. It is a rich sandy loam that for the most part lies well to the sun, and watered by as fine a spring creek as there is in the province. The farm consists of about one hundred acres, about sixty-five of which are under cultivation. The remainder of the farm is devoted to farmyard and buildings, natural bush, orchard and pasture. The whole farm is of a rolling conformation that admits of easy artificial and natural drainage. This good drainage, together with the porous nature of the soil, admits of cultivation almost any day in spring, summer or autumn.

Mr. Wilkinson began in a small way. He took over the responsibilities of his father's rented farm and made what use

The young farmer who begins with no capital and through intelligence and perseverance overcomes difficulties that have discouraged men better equipped to meet them, always commands our respect and curiosity. This story of the methods and practices followed by Mr. Wilkinson in the intensive farming of a hundred acres is full of crisp, practical ideas, particularly for the man who lives near a market, or who believes in the safety that comes from having more than one string to his bow.—Editor.

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he could of a decidedly meagre equipment. Meanwhile he kept up a lively thinking and an open eye for bargains in the way of machinery and other farm utensils. Often for a few dollars one can secure a second-hand machine that will last for years. He resolutely set his face against going into debt. As he found he needed a machine he laid his plans for procuring it and saved money by paying cash. Further, he made it a rule to save manual labor by procuring labor-saving machinery. He was quick to see that an era of industrial development had dawn-

This shows the rolling conformation of the land, the five pine woods, and the never-failing trout creek and shade trees suggestive of good pastures.

ed for Canada, and he made up his mind that it was good business to prepare to feed the incoming multitudes who for years to come were to be consumers of farm truck. From the very beginning his judgment in these matters has proven to be sound. He has found a ready market for everything that he could produce, and to making his farm produce a maximum he has devoted all that he knows of agricultural skill. In a word, in this case we have a fine combination of a farm suited for this purpose, of a man who knows his business, and an opportunity for the disposal of the goods that such a farm and such a man can produce.

Begins on a Good Basis

Wisdom was shown in not attempting at first a line of truck farming that requires expensive outlay and a wide experience. He was quite prepared to leave that sort of gardening and farming to those who had the time and money to make it pay. His aim was to produce what would find a ready sale and that was likely to be sure in returns. Hence he specialized on such articles as potatoes and the other garden produce that any farmer's son knows how to grow. Potatoes, however, he made his specialty. Of these he aims to grow two varieties; one to supply the early market and another the main crop.

The rotation practiced on this farm is the following, with some adaptations to meet special cases. Roots, followed by oats or wheat, then clover and timothy. Mr. Wilkinson is a believer in the theory that clover cannot be grown on such land as he operates, in a three-year rotation, after about twelve years. As in most things that he believes, Mr. Wilkinson's theory is founded on actual experience on his land. If he were able to fight the pea weevil successfully he would grow peas as their effect on the land is highly beneficial.

Mr. Wilkinson has specialized in the matter of potato growing. Of these he has about four acres of an early variety and about five acres of the later kind.

How He Raises Potatoes

As soon as the hay is removed from the field the sod is given a heavy carpet of manure. This allows the rain to thoroughly leach the manure into the sod where it starts up a vigorous aftergrowth. Late in the fall, this is plowed quite deep and left for the action of the frost. In the spring this is disked thoroughly and a shallow ploughing is given in order that a deep, mellow seed-bed may be prepared. In planting his early potatoes a fertilizer is used with the potato-planting machine. This fertilizer, rich in potash, is applied at the rate of about five hundred pounds to the acre. Mr. Wilkinson has no doubt as to the profit of using the fertilizer. He has found the results to be readily detected in the potatoes though the best results from the fertilizer are shown in the fall wheat that follows the potato crop. Mr. Wilkinson is a firm believer in the value of farm manure and he uses the artificial fertilizer only as a supplement thereto. Were he able to furnish all the stable manure that he requires he would be prepared to reduce his use of artificial fertilizer to a minimum. He finds that he has the best results follow the sowing of his oats after the potatoes that have been manured. It will be noted that it is the

A part of the barn lean to. It is about fifteen by seventy feet and is cement floored throughout.

late potatoes that are planted on the land fertilized with the stable manure.

Mr. Wilkinson sets his early potatoes away for sprouting in a moderately heated room about the middle of March. He aims to plant about the first of May, though a good deal depends in this particular upon the season. The marks for the early potatoes are made by the potato planter, a tool that does the marking and distributes the artificial fertilizer at the same time. The potatoes are then planted by hand and covered with the hoe. In this way the sprouts of the potatoes are left uninjured. The early seed is planted whole. The later seed is cut into sets containing about three eyes, the sets being made by a cutting machine. The potatoes once planted, the ground is worked with the weeder and harrow till the potatoes are so high that they are injured by these implements. The late potatoes are planted and covered by the potato planter. The scuffler is kept going as long as the horses can get through between the rows, every precaution being taken to prevent the scuffler from going so deep that the potato rootlets are injured.

Mr. Wilkinson is not an enthusiast in the matter of spraying for potato blight. He has tried this treatment but has not found it as satisfactory, as some would advocate. It may be that he has had no blight to bother him.

The yields vary a good deal. "You see," said he, "we have a good many things to contend with. We don't have things all our own way. The frost sometimes nips the potatoes off early in the season. One year this discouraging experience was repeated three times. The only way is to keep on keeping on. There's no use getting discouraged and lying down on the job. You must keep right on and make the best you can out of things as they turn up. There is no one set way in this business."

A potato digger is used for harvesting his crop of tubers. Doing this has the advantage of giving the land at the time of digging a thorough cultivation. In the case of his early potatoes, the land requires only a generous disking to be left in ideal condition for the fall wheat crop. Land thus treated frequently yields forty-five bushels of wheat to the acre. The artificial fertilizer has a way of producing a fine wheat sample.

While he specializes on potato growing, Mr. Wilkinson aims to produce all the vegetables that an ordinary city dealer cares to handle. His mode of marketing is to secure a number of merchant customers and to keep up their entire supply of garden truck. In this way he has found it wise to grow sweet corn, cauliflower, cabbage, carrots and such other garden products as may be in demand. His corn is sown about five or six times in the season in order that he may have a continuous supply. One of his market loads is a good thing to see. All vegetables are brought to a special sorting and loading house in order that only a first class article may be offered for sale. His customers are asked to let him know of any defects that may accidentally find their way to his goods and any such defects are remedied. "The best thing to do with a mistake of that kind is not to have it," is his motto. Very rarely has any complaint been made regarding his goods.

All customers are not reasonable, and when such are found Mr. Wilkinson makes it a rule to give them plenty of sea-room. When he is trying to please one crank he may lose a customer that is really worth while. Mr. Wilkinson knows from week to week just what each customer requires and so he has no loss of time marketing, nor has the customer any worry about where his supply is to come from. He runs no system of credits with his customers. His invariable rule is "cash on delivery every time." This rule has saved him loss and worry. He will have no haggling or dickering. He sells none but honest goods, and has a reputation for straight dealing that means a ready sale of goods at the top prices. He maintains that a market gardener must put up his own load and never, under any circumstances allow anything but good material to be offered for sale.

Markets Honest Goods

It must not be thought that Mr. Wilkinson found his merchant customers waiting for him, or that he knew by any happy instinct where to look for them. He had to find his market. At first he offered his goods on the market in the regular way. He found that certain merchants came to his stand regularly, and as time passed he and they

The sorting shed where the market loads are prepared. Note the hub-high sorting platforms at each side, and the large side doors through which the prepared vegetables may be handed to the person loading the wagon.

Mr. Wilkinson's farm house. It is built of hollow cement blocks, has running water, and is splendidly lighted.

found it to be mutually advantageous for him to sell them directly. When he secured a regular customer he made up his mind to hold him by square dealing. He has aimed to produce what his dealers could sell and he has done all he could to have his goods of the finest quality that he could produce. He has pride in his work as well as a wish to make money. Not only does he like to make a dollar out of his goods but he is pleased when his dealer reports satisfied customers.

Additional revenue comes from the cows and from the poultry. In this way he is able to make a profitable use of a great deal of his vegetable product that he does not care to offer for sale to his customers. For instance, turnips that are too small or not of the type required for the market serve a good turn for the feed room of the cows, the hogs and the poultry. Carrots and other vegtables are treated in the same way. Further, his corn field is in this way made to do double duty. He sells the corn therefrom at a paying price and has the stocks for fodder. The corn stalks are hauled to the barn, placed on the floor with alternate layers of straw. In this way the corn is prevented from heating. The mixture, as it is required for the regular feeding, is run through the cutting box, mixed with meal and roots, sprinkled with salt and water and left for the next feeding. The cows show their appreciation of this ration by eating it readily and by giving a fine yield of milk. The cows freshen in the winter time when prices of butter are good and the rush of farm and garden work usually eases up.

Intensive Work

By watching the herds of men who specialize in diarying he is able to procure their calves. He is careful to raise the best heifers either for his own use or to sell to dairymen. Frequently he makes fifty pounds of butter per week—a very considerable addition to his load of farm produce. The calves are fed skim milk enriched by some form of calf meal or oil cake or some such aid to their thrift. The calves fed for vealing purposes are raised on the cows. The vealers are killed on the farm. Mr. Wilkinson took pains to become expert in this work, and he spares no pains to have his dressed veal the best possible in quality and in appearance. A number of fine hogs are

raised and dressed on the premises. These are fed skim milk, buttermilk, the smaller vegetables, oil cake and meal.

The poultry receive the same attention. The stock offered for sale are crate-fed and sold dressed. Mrs. Wilkinson has had special success with goslings. For the first few days and till the cold wet days are passed she keeps them under glass and helps them over the more precarious days of their existence by extra care and attention. Mr. Wilkinson has found out that he can make as much as two dollars per bushel out of his wheat by feeding it to his poultry.

Treatment of Manure

The stables have cement floors, with the gutter sloping to the centre. From the centre of the gutter there is a large pipe leading to a liquid manure cistern outside the stable, and adjacent to the manure pile. As this cistern fills up it is emptied upon the manure pile. It must be remembered that there is a lean-to at the east side of the barn, seventy feet long and about sixteen feet wide. The floor of this lean-to is on a level with the barn floor. Part of the upper part of this lean-to serves as a store-room for chaff and for a granary, while the lower part serves at one end as a hen house. The remainder of the lean-to provides a dry yard, and a shelter for a watering trough. The whole is floored with cement, and in a part of it is a basin-shaped cement receptacle for manure that causes any liquid manure to drain back into the cistern already mentioned. The manure that is not spread on the sod, as already mentioned is taken out as soon as the ground freezes in the fall or early winter. Mr. Wilkinson keeps his cows in over night during the summer months. In this way he secures about thirty additional spreader-loads of manure that go a long way towards making his vegetables thrifty. Few farmers in the province take the pains with the farm manure that Mr. Wilkinson takes. The results are seen in the high degree of fertility to which he has brought his farm. He markets a great deal of produce, yet his farm is increasing in productiveness. Further, his clean barnyard is a considerable item in itself.

One word more must be spoken in behalf of the lean-to. A system of gates that any farmer can construct for himself, permits this lean-to to be divided into fine exercising room for the stock. On stormy days or when a sudden shower drives the farmer to the barn there is clean and sheltered place for unhitching.

The thing that impresses the visitor to this farm is the sense that what has been accomplished is the result of thrift. What has been done has been done by the farmer himself. Further, one cannot but feel that Mr. Wilkinson is only beginning. He does not rest satisfied with present attainment but he is continually planning for better things. Accomplishment, thrift, making good as he goes along, love for his work, and an enthusiasm for success backed by downright hard work and a fine capacity for staying on his job—these are some of the characteristics of this successful agriculturist. While Canadian farmers have in their ranks men like Mr. Wilkinson, the future of agriculture in this country must continue bright. The abandoned farms or the cheap old homesteads of Ontario, are wonderful places for possible farm successes if our young men could see the vision.

The Red Gold of Leamington

Farming Under Glass on the Shores of Lake Ontario

By JUSTUS MILLER

The vegetable forcing industry promises rapid development during the next few years. For the men with a small place, a greenhouse is an investment warranted by the fact that the high cultivation possible, and the prices received for out-of-season crops, bring an income scarcely in the same class with that derived from the same acreage out of doors. It is also worth taking into account that this method of farming affords sufficient work and profits to keep a boy or two busy and contented at home, until they are old enough to safely start out on their own responsibility. This story of an Ontario farmer's success in the business is brimful of interest and information.—Editor.

"INDEED!" said James Bradford, looking reminiscently at the glaring flames under his 100 h.p. boiler, "indeed, I can remember how I used to whittle around this place twenty years ago. I divided my time pretty equally between growing corn and hogs and laying gas-pipe. If anyone had told me then that the sand in this district would be valued some day at a figure that I haven't learned yet to say too loudly I should have started to sift it in search of gold right away.

"Well! We hadn't struck the pay-streak then; that was all. We haven't discovered a Klondyke either; but we aren't growing hogs and corn now and we don't lay any more gas-pipe; that is, the majority of us do not."

There are different forms of wealth. Gold is one of them. But it isn't gold—the yellow kind —. that has made the price of the Leamington pay-streak gallop along like a homing rabbit. It is a surer form of wealth than that for the worker has been always rewarded for his work. In this story I shall tell how the red gold that follows an indoor tomato flower has brought the growers of that district into an intimate acquaintance with the yellow variety.

The home of the red gold.

"The greenhouse tomato business is only in its infancy still, down here," continued Mr. Bradford, of Leamington. "It was started first by B. E. Ellis, who made a fortune from it in a short time. Now four of us are entering the game pretty strongly. Altogether we have over 30,000 square feet under glass or in the process of construction, and we all intend to enlarge. Others will follow, too, very soon.

"But you know this greenhouse work is not a very old feature down here in the Leamington district. In fact the outside fruit and vegetable business is not of so very long standing. Why, when I came to this farm a little over twenty years ago these crops were unheard of. We all grew corn and pigs then. If anyone had mentioned early melons or peaches we should have smiled.

"But gradually it was discovered that this soil and climate were adapted to vegetables and fruit. Already we had proven that corn and pigs ceased to flourish mightily, after a time, upon a sand loam. So we were ready for a change.

"About eight years ago the first greenhouse was built in this locality and that part of the industry has been making progress

ever since. We have used them to start early tomatoes, melons, cabbages, peppers, etc., for outside cultivation, and have grown lettuce and cucumbers inside. The growing of tomatoes the year around has just passed the experimental stage."

But the growers seem abundantly satisfied that it is a sure thing. Mr. Bradford has a house 104 feet x 70 feet already and is constructing a new one 224 feet x 36 feet. Three others in the district have large houses under construction, while much larger plants still are planned. And they are erected for one purpose—to welcome the little red tomato.

The Sun Parlor of Canada

In many ways Providence has adapted the Leamington district and the early tomato industry to each other. In the first place that section of our province is the Florida Beach of Ontario. You can't get much farther south in Canada than at Leamington. The land bordering the lake is high above water level, and the temperature is very mild. The "oldest inhabitant" fails to remember a time when the mercury descended below 16 minus, and the snow-flakes are exceedingly coy. Along the lake the land is high above water level and little danger need be apprehended of late spring or early fall frosts.

Mr. Bradford's land is situated on the lake shore and in common with the neighboring farms is of a sandy loam composition. Natural gas is piped to his plant and affords him power. A one hundred h.p. boiler is heated by twelve large gas jets very satisfactorily. He reports this power to be a little cheaper and much more convenient than coal. Ordinarily the greenhouses are heated at seven pounds steam pressure, which in very cold weather is increased to fifteen pounds.

Sixty Cents Profit Per Plant

The tomato seeds are planted in a compost made of stable manure and rotted sod. Bone phosphate and potash is then applied to this and a little later stable manure is added. Last summer the seeds were planted in the middle of August in flats for this winter's crops As soon as they had grown sufficiently, they were transplanted into 5-inch pots and were left there for a couple of weeks. After a fairly strong, compact root system had been developed they were transplanted for the last time. The rows were placed twenty-one inches apart and the plants were eighteen inches in the row.

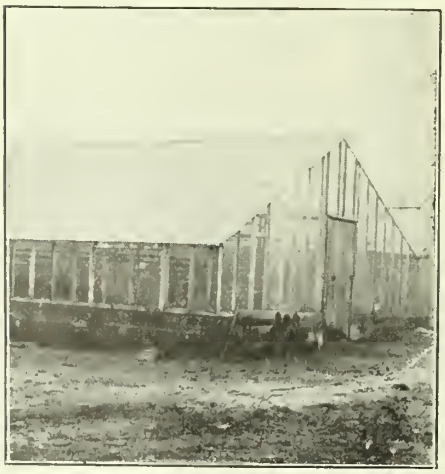
The vines are trained up binder twine and will grow to the height of seven feet, although Mr. Bradford prefers a plant cut back to five feet. They are tied to the twine with Roffea—a Chinese grass. They started to bear this year about the first of December and bore well until the last of January. While growing, the vines must have all the suckers pulled away. Moisture upon the leaves causes mildew so water is applied to the roots only. Once a week the soil is thoroughly soaked with a hose.

Producing four pounds to the plant.

"I am almost too young at the business to give you very accurate figures of yield or profit," remarked Mr. Bradford. "This is my first year and already I can see improvements that may be made. For instance, I intend to begin operations at least a month earlier next year so the last tomato will be ripened by Christmas.

"However, I am perfectly satisfied with the business. Our plants will average us about four pounds each and I am safe in saying that the cost of production will not exceed ten cents. I have sold them all at from twenty to twenty-five cents a pound F.O.B. Roughly speaking about ten thousand plants may be grown upon an acre. Now I shall leave you to calculate the profit.

"When my second house is in working order I shall have 15,344 square feet under glass and expect to clear about $2,500 a year from this department of my farm. Eventually I expect to inclose about two or three acres."



A section of the mortgage lifter.

All the produce grown by Mr. Bradford is sold through a co-operative association of which he is the organizer and president. All the sales have been most satisfactory, he reports. The tomatoes were disposed of in twenty-pound boxes to the retail trade in the cities of Ontario. The demand far exceeded the supply, Toronto alone asking for more than were grown. The Leamington growers are hopeful of a steady market that always will demand their maximum output.

"But our houses are put to other uses than tomato growing," continued Mr. Bradford. "The second crop is ripened in the field and we only grow the seedlings in the greenhouse.

"We always have a crop of lettuce ready to be transplanted when the tomato vines are taken away. The plants are placed six inches apart and they grow very quickly. Hereafter we will have the lettuce ready to market in February. We pack it in barrels and sell it by the pound, usually it goes at about ten or twelve cents. I have grown many plants of fourteen ounces weight and there is usually a profit of about five or six cents a pound. From a section four feet square I have sold over $200 worth of lettuce. It is a very satisfactory crop."

After the lettuce is sold the greenhouses are given over to the growing of tomatoes, melons, cabbages and peppers, for outside transplanting. But this is a big industry all in itself and has done a great deal to start the land boom along the Leamington water-front. It is another story.

Johnnie's Stomach-ache Commercialized

When the seedlings are out of the houses cucumbers are given the place of honor. The seeds are planted in the middle of March in sand in small flats and are replanted in pots, as are the tomatoes. They are planted finally in rows eighteen inches apart with the plants two inches in the rows.

They bear during the third week of June. One point to be remembered in handling this crop is that if grown too early it is a money-loser. People don't begin to think in terms of cucumbers until the weather gets warm. After the middle of August the demand ceases, and the hard-working greenhouse is hitched up to its tomato load again.

The cucumbers sell all the way from $1.50 to 30 cents a basket. There are smaller gross receipts realized from this crop than from the others, but the proportion of profit is much greater. The cost of production is particularly low, Mr. Bradford stated, as no artificial heat is required during most of the growing season. In some seasons he has cleared $250 from the crop in his 104-foot x 44-foot house.

"We use the Skinner overhead irrigation system to water the lettuce and cucumber crops. It is a very thorough and comparatively cheap system to in-

(Continued on page 88.)

Orchards on the mountain flats in the Okanagan.

Business Women at Fruit Farming

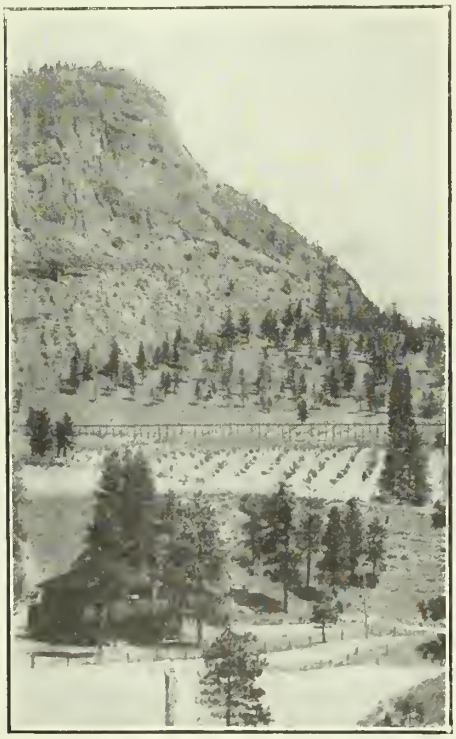
In the Okanagan Valley, Money is being made by Educated Women who Love the Work

By E. B. REESOR

Farm industries for women are fast becoming popular throughout Canada, but the story of how women work and manage and pay for farms in the fertile valleys of British Columbia is still new enough to make most of us wonder. The writer of this article visited several of these farms and tells us here just how the work is going on.—Editor.

MRS. MARY CAMPBELL, a Scotch Canadian woman of seventy-one years of age, started fruit farming in British Columbia when she was sixty-four. Marvellous? Yet the story of what she has accomplished was told with as little sense of having done anything out of the common as the average housewife tells of her daily doings.

Mrs. Campbell, who maiden name was Mary Dick, was born and brought up in Lanark Township, within fifty miles of Ottawa, Ontario, and moved to near Pilot Mound, Manitoba, with her husband and small children to take up a homestead. After her husband's death she thought she would move off the farm and get someone to manage it for her, but she had been a farmer's daughter and a farmer's wife all her life and soon found that she was happier on the farm and was quite capable of managing it, and of bringing up her six children at the same time. She became an authority on farming in Manitoba and took the keenest interest in all affairs pertaining to a new country and by her sound judgment, common sense and keen intuition became possessed of one of the finest and best managed quarter sections in Manitoba. Her sons did not take to farming, though two of her daughters did, and, when the boys were of an age to look after themselves they felt that they should relieve their mother of the farm management, but really preferred doing other work. Two of them moved further West but the youngest remained near by, going into business in Pilot Mound. He suggested that his mother give up the farm and take life easily, but Mrs. Campbell had other ideas. She gave in one summer to the extent of taking a trip to the Pacific coast, and it was characteristic that she took the trip alone, for she had an idea that if she gave up farming in Manitoba she would look for something that she could do out of doors and keep close in touch with nature elsewhere, perhaps where the Winters were not so rigorous and the climate was dry. She had a glorious trip. Took in everything that was to be seen, went down to Portland, Oregon, and saw the fruit growing country, up to Seattle, some weeks in Vancouver and, on her way home, turned down into the Okanagan Valley. She had driven about a good deal, learned much about the fruit growing and became keenly alive to its possibilities not only as a source of income but also as to the amount of pleasure and good health to be derived from taking it up as an occupation, but it was only the last morning of her stay that she went even so far as to ask about orchard lands.



A two-year-old fruit orchard on the slope of Giant's Head Mountain, Summerland, B.C.

"We were out driving," Mrs. Campbell said when telling her tale, "and I was going away that evening. 'I wonder, I said to the young man I was with, 'whether I could get a bit of this orchard land for myself.' 'We might stop off and see.'"

Gets an Option

"We held up the horses just where we were and both went in to a little shack a good bit from the road. The owner of the shack held the 15 acres of orchard lands around him and before I left I had an option on 10 acres for $2,000. I started home the next day thinking to talk the matter over with my two girls and find out whether they would rather grow grain in Manitoba or fruit farm in British Columbia. When I got up to the main line of the C.P.R.

Corner of an orchard house veranda.

and stepped off the train at Sicamous I found a crowd of people waiting there to take the train down into the Okanagan and, from their talk, I felt that they might be going to buy up everything there was left. I went on, though, but by the time I got into the Province of Alberta I felt sure that someone of those people would get my ten acres, perhaps offer more than the $2,000 for it, so I turned right back, bought the land, and went on to Manitoba a prospective Okanagan Fruit Rancher.

"We moved in the next spring. There were a few peach trees on the land but the rest was uncultivated. First we started to plough the land and plant out more trees, although it is better to plough in the fall. The land, of course, is sold with irrigation flumes, and the water all ready for use. We built our house, too, yes, and helped to build it, put in the concrete cellar floor ourselves and did a great deal of the other work. We had to learn everything new about this kind of farm life and there is nothing tasy in it. With the grain, you put it in the ground and, with a little attention, it grows. You cut it with machinery, put it in bags and off it goes. Not so the fruit. The trees are just like children, a different method of upbringing with every one of them. But there is the compensation. You grow so fond of those trees that nothing is a trouble. You get into the way of talking with them, and the flowers too, and the first thing we knew we were talking away about our orchard trees and saying what one was going to do and how another was getting on just as if they were humans.

"Then, when the fruit began to come we were most careful that no tree should carry more than it could well bear. We did not want any wasted on the ground, we did not want soft fruits to touch each other on the trees, and we wanted the very best that we could get from every branch, We just watched, and when our fruit matured there was none better in the Okanagan, and that is saying a good deal. We pick our own fruit, pack it and ship it to retailers in Alberta and Manitoba towns.

"We have been six years here and our property is valued at $16,000. It is hard work during the fruit season, but I like it better than any other work, for there is an element of mothering and managing about it, and that appeals to women. I can stoop and stretch and turn anyway, and my bones are not a bit stiff."

Mrs. Campbell enjoyed leading us through the orchards and her remarks about the trees were as the sayings of a proud mother when speaking of her children.

"This Wagner is doing its best for me. Yes, all these Wagners are."

"These Triumphs were good, very good to us this summer, now we'll care for them and let them rest."

"Something happened to this little McIntosh Red, but we found out what it was and cured it."

Practical Economies

There were all kinds of fruit and vegetables in the garden, and when we were taken to the store room there were quantities of it bottled for winter use. In the kitchen Miss Campbell was putting down corn and tomatoes for the winter. The corn was cut from the cob with a sharp knife, put into a preserving kettle and just covered with cold water. Boiled ten minutes, and bottled in gem jars like fruit; no salt. The tomatoes were peeled and done in the same way. Miss Campbell said it kept beautifully, but, when a jar was opened it should be used at once.

Mrs. Campbell and her daughters have managed their orchard so well, with such economy and with such excellent results, that more than one man-rancher had appealed to them to undertake the management of his, and Mrs. Campbell's reply was characteristic. "We have our house work to do as well as our ranch work and there is sewing besides. I dinna think we can undertake any more just now."

There are other women ranchers in this delightful part of British Columbia. A road through the mountain flats leads to Mrs. Pineo Young's orchard. Mrs. Young's husband had been a physician in Manitoba when I was there twenty years before, and I had seen her in her pretty home surrounded by all that was pleasing, a brilliant hostess and a much sought guest at every gay doing. It was her voice I recognized first, the same pretty intonation, peculiar to Haligonians. Here she was the centre of life in her orchard. It was a peach-picking day and she was superintending. She, too, knew every tree, and laughingly said, "I just mother them; they know me,"

Winding mountain roads well paved and graded.

almost the very words Mrs. Campbell had used

Mrs. Young was very busy, had to have her eyes and her ears, her mind and her feet everywhere at the same instant, but I spent some time with her the following Sunday afternoon and asked her how she, of all women, had taken to fruit ranching. Her story was a very simple one.

Death had visited her home twice in quick succession and there had seemed nothing left to live for. Her brother was in the Okanagan and she thought she would go down and see what the country was like, and also try to dispose of a ten acre lot her husband had bought and thought that at some time he might live on.

When Mrs. Young saw the property and the glorious view from it she wanted to keep it. The next year she came again, and she thought she would like to make something from it. Before she realized it she was so interested in her orchard that it became a part of her. She studied orcharding methods, learned to pack the fruit and finally began to look for her own market. She has only her little packing house on the orchard lands but lives in two cosy tents all summer long about a quarter of a mile from it. During the winter months she lives in Vancouver or travels. She studies all about fruit and comes in contact with a life, high in interest, that her orcharding has brought to her. She has a good income from her orchard and feels delighted that she is earning it, and the value of her land has increased by leaps and bounds.

Artists Take to Fruit Growing

From Mrs. Young's we drove to the farm of the Misses Spencer. Here we found other women devoting their lives to fruit growing and their story was still different. They are ladies of decided artistic tastes. In earlier life they opened a photographic studio in one of the larger British Columbian towns, and made a decided success of it. They did not want to be busy indoors all their lives and decided that they would buy a property somewhere where they could grow flowers and fruit and live as much out of doors as they could when they grew older.

They came down to the Okanagan, bought a property, but could not stay away from it. The next year they built a most artistic home of stone and B.C. fir shingles. Then they wanted to plant some trees, and before they knew it they were living altogether on their ranch, had grown interested in the fruit culture, had won prizes for their flowers, and were right in the midst of peach harvesting when I saw them. And theirs was the same story. They had grown to know and mother their trees.

It was all so new to me, women working all the daylight hours on their ranches, feeling well and wishing the days were longer. It put fruit growing in a new light, a desirable light, yet there was not one of these women who said the work was easy. It was harder than Manitoba farming, harder than housekeeping, harder than a business life, but every woman loved it.

$4,000 Income from Skunks

Producing Alaska Sable for the Millionaire's Wife

By MORLEY J. EDWARDS

"Dear Sir:—You want to know about profit on my skunk farm. I can't tell you exactly for I haven't kept track of everything like feed, etc., but I sold 168 skins last year and these the dealers paid me from $2.50 to $4.75, average about $4.00 for. I sold some oil too, to a firm in St. Paul for about $40. This was my third year with skunks and by long odds the better one. I have about two acres fenced in and don't give too much time to it myself. My two boys look after them nearly all the time after they get home from school.

"The feed didn't cost me so much this year for we found out we could feed back the skunks we killed to the others if we boiled the meat with cabbage and turnips. Added to this we gave them table slops, stale bread and some green stuff, but they seem to scrape up a good bit of their own feed and need very little in the summer. All put together I don't suppose their feed cost me much over $100. Had trouble the first year with the old skunks killing the young ones, but found out how to keep them with their mothers and this hasn't bothered us much this year.

"I should fancy skunk farming would work out all right in Canada. The colder the weather the better the fur and they tell me you have it pretty cold up there. Anyway a farmer with a few acres to spare and a couple of husky boys can't go far wrong in trying it. I forgot to say I sold half a dozen pairs of breeders besides the skins for an average of about $12 a pair. I could supply any quanity of these in prime shape if they could stand the shipping. I don't know as to whether there would be any duty to Canada.

"Yours truly,
ALEC. DURNO."

Greensville, Dec. 18, 1913.

Here's a practical proof of the facts we have been trying to bring out in a general way in the last few issues of Farmer's Magazine, that there is good money in fur-farming for Canadian farmers if they go into the matter intelligently and prepared to do a little experimenting. The above letter, which bears its own proof on its face, was sent to the writer of this series of articles in reply to a request for information as to the practical working out of skunk-farming. Look at the figures it quotes for a moment:

The fact that this series of articles on fur-farming has aroused considerable interest has been manifest in the letters asking for further information in regard to detailed points which have been received. So far these have been as fully as possible answered and any reader, who desires further information or is in doubt as to any of the points taken up will have the information given by the author, if he will send his inquiries to the Editor. Another article is to follow on other fur animals for profit.—Editor.

This chap's hide, when the white section is cut out, will go to make up an "Alaska Sable" coat for a millionaire's wife.

RECEIPTS—	
Skins sold for	$650
Oil, for	40
Breeders	70
Total	$760
EXPENSES—	
Feed, say	$150
Labor, say	100
Amount which should be placed in a sinking fund to pay for original expense, enclosure fence, etc.	100
Total	350
Net profit	$410
Percentage profit—117.	

While the figures allotted to expenses are, of course, only approximate, we believe they are at least fair. If so, we see that Mr. Durno's skunk farm paid him last year a little over 100 per cent. How many farmers are getting that from the capital they have invested and the efforts expended in cattle-raising, grain-growing or dairying?

Naturally, the first inquiry that arises in the mind of the uninitiated when skunk-farming is mentioned is one regarding the all too-well-known and too prevalent odor which is inseparably connected with this otherwise really handsome animal. Those of us who have had "experience" in the bush in our early days on the farm will rather shrink

from the thought of working with or handling the innocent-looking quadruped which has the ability to make itself so odiously and odorously objectionable. But such ideas appear to be very far astray. When properly handled,—so comes the universal testimony from the skunk-farmers, the mephitis, as the scientific men call it, appears to be less objectionable than almost any other of the "farmed" fur-bearers. Those who have had experience tell of walking through dozens of animals, kicking them side for a passage and even lifting them by their tails, without discerning any trace of the objectionable odor. They are in this respect, indeed, much less in evidence than the much-vaunted silver foxes which give forth quite unpleasant odors when they are gathered in any numbers. The skunk, perhaps to a greater extent than almost any other of the wild fur-bearers, seems to become used to the presence of humans and after a little becomes very tame. In the early days of the industry when less was known of this feature, the practice was frequently followed of removing the scent glands, this operation being performed when the kittens were about ten days old. Later experience has advised this to be unnecessary and even harmful.

A Sideline for any Farmer

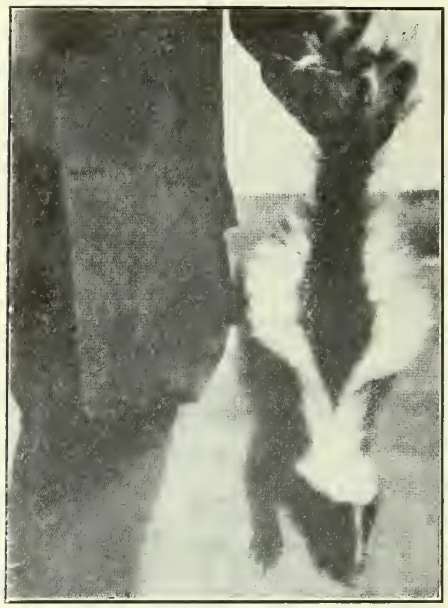
This feature of easy adaptation to the somewhat unnatural conditions of the necessarily-limited area of the fur-farm, together with one or two other advantages would seem to strongly recommend the skunk as an animal with which a farmer with a little time to spare, might begin the fur-farming game with some assurance of success. In the first place, the original outlay is not so large as with the animals which carry more valuable pelts by reason of the fact that the skunk is not so energetic a climber or digger as the fox, does not require free access to water as do the mink and otter, and, again, seems to require much less attention in the matters of care and food than do these other animals. As against this, of course, it must be remembered, that, while there is a growing and unsatisfied demand for skunk skins the prices offered are not high, $1.50 to $4 being the average paid per skin offered at present on the Canadian market. These prices, it will be seen, are scarcely equal to those mentioned in Mr. Durno's letter, but it must be remembered that the bulk of his sales occurred over a year ago. At that time similar prices to those he quotes were freely offered in Canada. Within the past few months they have dropped a notch, but with the steady demand should creep back again shortly to the higher figure.

Five years ago any merchant who attempted to dispose of a set of furs under the name skunk, would have lost his customer very quickly. A strong demand arose, however, for a medium-priced fur of good appearance and to supply this the skins of the humble and popularly— or unpopularly— odorous animal began to be sold very freely as "black marten" and "Alaska sable." The substituted article served a good purpose and within the past year or two has become so popular that now other less expensive furs, such as rabbit and wallaby are put through special manufacturing processes known only to the elect and sold under the earlier-maligned name of skunk.

This gives some explanation of the present large market and of the outlook for the skunk-farmer. But let's get back to methods of treatment.

How to Handle Him

The animal may be handled in enclosures very similar to those explained as used for mink in the January issue of this journal. As noted above, however, less care is required to make the enclosure escape-proof. For instance, the wire fence ordinarily used is only five feet above the ground and a foot to a foot and a half below, as against the twelve foot height found necessary in the fox and mink ranches. Again, much less outlay is required in the way of pens and nests.



The domesticated skunk soon becomes very tame. An actual photograph of a live animal.

Still another feature, the fact that there is less danger of fighting among the animals themselves, and that consequently a considerably larger number may be allowed to run together, is largely in favor of the skunk. Some breeders—this fact is evidenced in one sentence in Mr. Durno's letter introducing this article,—have had considerable trouble as a result of a tendency on the part of the older animals to kill the young at the mating period, but this can be obviated in a comparatively easy way by keeping them in pens after mating, and until the kittens have gained about four months' growth.

Rough Land the Best

The ground selected for the enclosure should resemble as near as possible the skunk's habitat—that is, land including holes in the ground, rocks, trees, stumps and bush. Hundreds of Canadian farms have three or four acres of just such unimproved land up against a hillside. To include a section of wood lot in the enclosure would be all the better.

Some experimenters have begun with enclosures as small as 20 x 40 feet, but this seems hardly conducive to success, and all advice points to making the "farm" as large as possible. This is expensive to some extent at first, but it will be found to pay in the long run. Aside from the fact that all these animals do better when they have space to move around in, there are one or two other reasons which bring about this general result. For instance, in the small enclosure the skunks are naturally forced more or less constantly into the sunlight and in consequence the fur fades and deteriorates. With this in view, feeding is also done after sun-down. Under natural conditions, the skunk feeds on mice, bugs, slugs, worms, berries, seeds, roots and bark and about everything else he can ferret out. In a small enclosure the supply of these natural foods is decidedly limited and more food must be given. The larger the "farm" the less the food supply "per capita" and also a consequent better health and better coat of fur for the farm's inhabitants. The most experienced fur-farmers state that at least an acre of enclosure should be allowed for every hundred skunks.

The attention needed may be summed up briefly as including the necessary feeding and watering once a day in the evening and the separation of the pregnant females at breeding time. Otherwise the animals, provided they are free from attack by natural enemies, may be left almost altogether to themselves.

Ordinarily the skunk-farmers recommend the presence of one male to four female animals. The period of gestation occupies about six weeks and the litters run from four to nine. Of these, with fair attention, eighty to ninety per cent. of the young should be raised.

The Chloroform Theory at Work

"What about killing the critters?" inquired one farmer who had been listening in an intense way while the writer quizzed a young man who has had a couple of years' experience with a small skunk farm somewhere up in the Temiskaming district and who came home at Christmas time with a very respectable-looking roll of bills. "What about killing them? Don't you have to go out in an old suit or something that you bury all the rest of the time?" This man had evidently had some of the usual "skunk experience" in his boyhood days.

"Not a bit of it," came back the answer, promptly. "It's no trouble at all. At first I used to trap them, but I never got just the beasts I wanted. Then I got on to a new game. Now I keep a bottle of chloroform in the shack, and when I want to kill for my skins I soak a sponge in the chloroform and tie it on the edge of a ten-foot fish pole. The little beggars are so tame I can walk

(Continued on page 86.)

A roller is a necessity where a smooth hard crown is required.

Good Roads in Canada

The Old Statute Labor System has been Obsoleted for a Hundred Years

By WALTER JAMES BROWN

The question of road-building gets very close attention by all practical rate-payers. Next to the grants for educational purposes, this constitutes the leading items in our tax bills. Yet Canada is behind many other countries in intelligent highway construction and maintenance. This article goes into the question of methods. It looks into the work of European countries. It details some examples of good work in the neighboring Republic and examines the systems in vogue in each of our Provinces. The author concludes with some recommendations, for the most part commendable. The Dominion Grange meeting in Toronto recently carried a resolution of this subject, which is quoted elsewhere.—Editor

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WHAT is Canada doing just now to provide herself with good roads? The answer to this question is that, in the main, Canada is doing the same thing that she has been doing since 1894—discussing the good-road problem. Experiments of various kinds, legislative, administrative and material, have been started from time to time and good-road enthusiasts have learned many interesting and valuable lessons; but the classes of roads the country needs are still largely in abeyance. The construction of permanent highways on the chief thoroughfares of half a continent is not a small undertaking and requires vision, courage, resource and executive leadership on the part of the many public officials who will be asked to carry it through; but Canada is not unwilling to undertake large enterprises.

The steam railways of this country are 25,000 miles long, all built since 1852. We have in this country steel ribbons enough to make a belt around the globe. These railways have cost more than 1,200 million dollars, only half of which was paid by the shareholders who now own and control the roads. The people of Canada through their Federal and provincial governments and through their municipalities contributed 600 million dollars to the railway companies. These vast railway systems form only part of the general transportation scheme of the country. They have been supplemented by numerous canals, harbors and steamship lines generously provided by the people of Canada. What other country in the whole world has in the same length of time put so much money into public utilities to help solve the general problem of transportation? And yet the most important link in the transportation chain is the rural highway.

Canada is a large country. There is great diversity of climate, topography, material for road construction and traffic. The climates touch the extremes of heat and cold; some are moist and some dry. We have the mountains of British Columbia, the level prairies of the central provinces of the West and the varied conditions that prevail in Ontario, in Quebec and in the provinces by the sea. Through the prairies there is very little road metal and the split-log drag must be used almost exclusively. In other districts the metal available varies from Laurentine granite to limestone, or glacial deposits of gravel. The traffic varies also. In the more densely populated centres the market gardener, the dairyman and the automobile driver compete for possession of the roads to the cities and market towns; in other sections the general farmer alone enjoys the peace and quiet of the rural highway, then in the newer parts is the prairie or forest trail or the mining road over mountains and muskegs. Road-making throughout Canada is, therefore, a complex problem. Each province has its special requirements, each must work out its own salvation. The Federal authorities may provide the money, but the provinces must build the roads. This is an accepted principle. No other contention is admissible, no other plan is justified by

Movable cement mixed with the carrier arm which conveys the concrete to position on the pavement. This method came into general adoption in cities last year.

the facts and no other scheme is authorized by experience. The roads will not be alike. On the contrary they will be as varied as the country and climate through which they pass; but they will, if properly constructed, meet the special and peculiar needs of the local community they serve. Ocean to ocean trunk-lines are not required; but each centre of population should have its radial highways over which will flow the traffic of business and the traffic of pleasure. A net-work of utility roads running to every point of the compass, built and maintained by the provinces, is the Canadian ideal.

A Municipal Function

Until 1900 road-making in Canada was almost entirely a municipal function. Since that date practically all the provinces have adopted some measure of legislation looking to the improvement of the public highways. In some cases merely engineering advice and instruction is given; in other cases a substantial measure of Provincial aid is offered. The provincial laws are not modeled after the same pattern, they are not like the laws of any other country dealing with similar conditions. Each law was framed to meet local requirements and grew out of local needs. Thus the road laws of Quebec harmonize with the old French customs, chief of which was that each farmer should be responsible for the road in front of his own property. In the Maritime Provinces the people were ready to accept State supervision. In Ontario the idea that still prevails is municipal control, so we are not as adept or as aggressive as road-builders as are the people of other provinces and states.

Statute Labor a Farce

Ontario is promised a new era in road-building. It is high time that the roads of this province were put on a scientific basis. Road-building has been in progress here for more than one hundred years. The first road-makers cut their way through the unbroken forests and laid the foundations for permanent and good public highways; but the generations that have followed have not made any attempt to get the annual road-work done according to any well-defined principles. The statute labor system allowed and still allows many kinds of dishonesty and abuse of privileges. The work done at great cost by one pathmaster is torn to pieces by the next. The men who go out to do work on the roads cheat themselves and the public by failing to do their duty. The money voted by the municipality for road improvement is largely thrown away because of the absence of intelligence in applying it. How can one excuse the total disregard of the first principles of road-construction, which characterizes the work on the vast majority of Ontario roads to-day? Someone has said that it is needless to condemn the ordinary township system of statute labor. It has perhaps done some good in the past under pioneer conditions, but its faults are fully apparent to those who are accustomed to good business organization. What is advocated and urged is that a more effective system be put in its place. The abolition of statute labor is advisable only because there is a more efficient, more equitable and more business-like system available. It is useless to commute statute labor and retain 50 or possibly 150 pathmasters to scatter the money to no purpose. It is a mistake to commute or abolish statute labor and then appoint councillors or commissioners to spend the money in such a way to make votes instead of roads.

A Township Engineer

In dealing with Ontario's road problem, Mr. W. A. McLean, Chief Engineer of Highways for Ontario, said in the course of a recent speech:

> "The best method is to follow the organization of every well-conducted business. Appoint one capable road superintendent to act as manager for the council, in supervising and carrying out works of road improvement. Centralize responsibility in one man, the council acting as a board of directors.
>
> "The abolition of statute labor is merely a means to an end—to make room for a better system, and every municipal councillor can render his best service by having a thorough understanding of the principles that constitute that better system. By doing away with statute labor entirely, levying a rate with ordinary taxes for road purposes, centralizing responsibility in one efficient road overseer, creating a policy of building permanent bridges and culverts, doing some permanent road-work each year and caring for all roads by the systematic use of the split-log drag—by such measures can a township council fully justify the abolition of statute labor."

The County System

The Highway Improvement Act brought many roads in Ontario under what is known as the "county system." About twenty counties have adopted this system and are receiving a portion of the money required for the improvement of their roads from the Provincial Treasury. Under the Highway Improvement Act the Province pays one-third of the cost of road improvement, the plans and specifications having been submitted to and approved by the Commissioner of Public Highways. This proportion is not sufficient. In some counties where conditions are extremely favorable it may answer very well, but in the majority of cases the counties in Ontario require far more assistance in the construction and maintenance of their chief thoroughfares than is at present provided.

In the May number of the Farmer's Magazine the writer urged the appointment of a Provincial Commission consisting of reliable and able business men and that the entire control and management of all the highways in both old and new Ontario should be handed over to this Commission. Recently the Provincial Government appointed a Highway Commission and has otherwise become active in investigating the good road problem. Some of the leading newspapers have also sent representatives to the United States to study the systems there in vogue. It is hoped that all this public discussion may lead the Government of the Province of Ontario to formulate a comprehensive scheme of road construction, improvement and maintenance that will satisfy the needs and meet the desires of wide-awake and aggressive farmers and business men of the Province.

A Dearth of Good Men

Apparently the greatest need throughout the Dominion of Canada is the presence of educated good-road enthusiasts. We have plenty of people who are adepts at criticising the systems of constructing and maintaining the public highways of the country, but we lack in having a sufficient number of competent and thoroughly trained road engineers. Nearly every farmer in the country thinks that he knows enough to supervise the work on the mile or two or road touching his own property, but it has been proven beyond all question that in the vast majority of cases the

basic principles of road construction and maintenance are continuously ignored or violated. To obviate this initial difficulty the University of Toronto has started, with the fall term of the present year, a new course in highway engineering. It is to be hoped that this course will attract a large number of capable students as there should be in a very few years an enormous demand for good road engineers throughout the whole Dominion. It would seem advisable for all Canadian universities and scientific schools to inaugurate theoretical and practical courses in highway engineering. In some countries these courses are three years in length and are really post-graduate in character. It is necessary also that the various agricultural colleges should give more attention to the subject of highway construction. The suggestion has been made that short courses dealing with this subject should be held each winter at the provincial agricultural colleges. The opportunities that are certain to be available in the near future to highway engineers and road supervisors may be predicted from the fact that France employs permanently between six and seven thousand highway engineers and not fewer than 10,000 foremen of works having charge of sections of roads. In France the problem of road construction has ceased to exist. In that country the big question to-day is road maintenance.

A mile and a quarter of sample road that the Ontario Government is building, in the township of Malahide and in Aylmer town. This road is part reinforced concrete and part Macadam.

Can Learn from all Save Russia

The methods of highway administration which hold in the better countries of Europe are worthy of careful study. The truth is that the people of Canada will find something to learn in the road systems of almost any country on the continent of Enrope with the exception of Russia. Germany owes her splendid roads largely to the period just prior to the introduction of railways, when they were built for commercial and military purposes. On the organization of the Empire in 1870, the State assumed control of the principal railways and the roads were delegated to the care of the provinces. In speaking of the roads of Saxony, for example, a United States Consular Report says:

"The roads are classified as (1) State roads, built and maintained by the State, and (2), Common or connecting roads built and maintained by the parishes. The first are under the State road director and staff, but the officers in charge of the State roads are empowered to supervise and issue certain instructions relating to the common roads, and to inflict penalties for neglect. There are 27 executive officers in charge of as many sub-districts. The skill, energy and thorough education, as well as qualification and executive ability of these 27 men is the cause of the splendid government and fine condition of the road system of Saxony. It is without doubt the finest system of roads in the world and is the result of patient toil, extensive experiment and disciplined attention."

Improved Roads Mean More Traffic

The roads of the United States, especially those of New York and Massachusetts, deserve careful consideration. The idea that is rapidly gaining ground in the neighboring republic is that roads should be constructed and maintained by the State instead of by the municipality. It has been found that a great deal of money has been wasted on the highways of New York because of political corruption. In numerous instances the roads were not properly drained and built and the men who had charge of the repairs were incompetent political office-holders. As a result the roads which were laid only a year or two ago have to be torn up and new roads put in their place. This condition has been to a certain extent duplicated in some of the counties of Ontario. Another fact has come to light, namely, that improved roads means a rapid increase in the traffic. The motor truck has put a strain on the road bed that was not considered by the builders of the highways. One instance of this character occurred a few months ago in Elgin county, Ontario. The townships joined forces in building a broken stone road on the townline. The two Councils and the farmers along the road were very proud of the result. The road lasted about two months. A ten-ton motor truck loaded with milk cut the road to pieces during a few days of wet weather and it became so bad that no one attempted to use it for the balance of the winter and spring.

Cleaning off the mud and useless surface material preparatory for the laying of broken stone.

Steel-jointed Concrete Roads

The only road that will give satisfaction where the traffic is heavy and may be increased is that made of reinforced and steel jointed concrete. This road has been thoroughly tested in Wayne county, Michigan. It costs from $1.00 to $1.50 a square yard. The cost varies according to the availability of materials and the amount of leveling and draining required. It is not much more expensive to build than Macadam; but is many times as durable. In the long run it seems a cheaper road than Macadam as the cost of maintenance for years after it is laid is almost nil. Retaining walls are not necessary except in cities and towns. The concrete is made of broken stone or pit gravel and sand. It is mixed by a power mixer and is laid either in one of two courses. The usual depth is seven inches. Wire is used for reinforcing. The steel points are put in from 15 to 17 feet apart to allow for

Sinclair creek canyon, two hundred feet high on each side of road. The falls of the Sinclair creek are here and drop eighty feet. The cost of this one cut in the construction of the road was $26,000.

expansion and contraction and are intended to prevent cracking. This is undoubtedly the road of the future for the eastern provinces of Canada.

To those who are interested in promoting the good roads movement in Canada the conditions fixed by legislation in the various provinces offer a timely subject for study. Space will not permit of an extensive treatment; but the following facts may be noted:—

Western Canada Roads

British Columbia.—Road building in this province has been almost entirely a State work. This has been due to the mountainous and heavily timbered character of the country. Provincial expenditure under the Department of Public Works is heavy in some years reaching $500,000. The excellent roads of Vancouver Island were laid out in early colonial days by the Royal Engineers, and the Province has since continued a similar style of construction. The roads generally have a 66-foot allowance, with a standard grade width of 24 feet exclusive of ditches. The stone obtainable is well adapted for Macadam construction.

Alberta.—For Government work on highway improvement a certain sum is voted for the purpose at each session of the Legislature. This money is divided among the constituencies of the Province according to requirements. The expenditure of the money on roads is carried out under the direct supervision of the Provincial staff. The expenditure for the past four years has averaged about $200,000 per annum.

Saskatchewan.—Formerly the roads were built and maintained entirely by the Government; but with the increase of population, many municipal organizations are adding to the movement to better the roads. The Government maintains organized grading gangs to carry on provincial road work, and builds all steel bridges by a permanently organized bridge crew. The sum of $50,000 is granted annually to assist municipalities in building trunk-line roads, the Province paying one-third of the cost.

Manitoba.—The municipal councils of this Province have full control of all road expenditure, the organization and methods being practically identical with those of the townships of Ontario. Important bridges are under the supervision of the Provincial Department of Public Works. The Government maintains the office of Provincial Highway Commissioner, the duties of which are largely educational. The bad roads of Manitoba are accounted for by the system of municipal control.

Quebec Slow to Leave Old System

Quebec.—Until recently the roads of this Province were maintained under a system similar to the statute labor system of Ontario. Each farmer was supposed to be responsible for the construction and repair of the roads adjacent to his own property. The frontages in Quebec are short, owing to the method of sub-dividing land, so that each farmer has only a very short section of road to keep up; but the method has not resulted in good roads. The Provincial Government has adopted the plan of making grants to townships where the old system has been abolished. The grants equal one-third of the expenditure, but do not exceed $1,000 in any one year. The people are very slow in accepting this Government aid. The outfits of roadmaking machinery have been secured by the Province to loan to municipalities. Some of the more aggressive townships are raising money by bond issues, one township, Huntingdon, having issued debentures for $80,000. The Government maintains an office of road instruction. It is understood that Quebec will soon undertake large and comprehensive plans for permanent road construction. A part at least of the Provincial highway from Quebec City to Montreal will be of concrete.

New Brunswick.—In most cases in this Province the largest portion of the road tax is worked out in statute labor, the Government supplementing the road tax money with a provincial grant for each parish, there being 144 parishes in the Province. The grant two years ago was $100,000. Only in special cases does the Government spend money directly.

Nova Scotia.—In 1880 the municipalities had full control of the roads and bridges of the Province, but neglected them, and the Government enacted various laws, first taking over the construction of larger bridges, and secondly, the repair of the same; then, thirdly, the construction and repair of the smaller bridges, and fourthly, the maintenance of the public highways to a great extent. About $165,000 is spent annually by the Government for roadbed repairs.

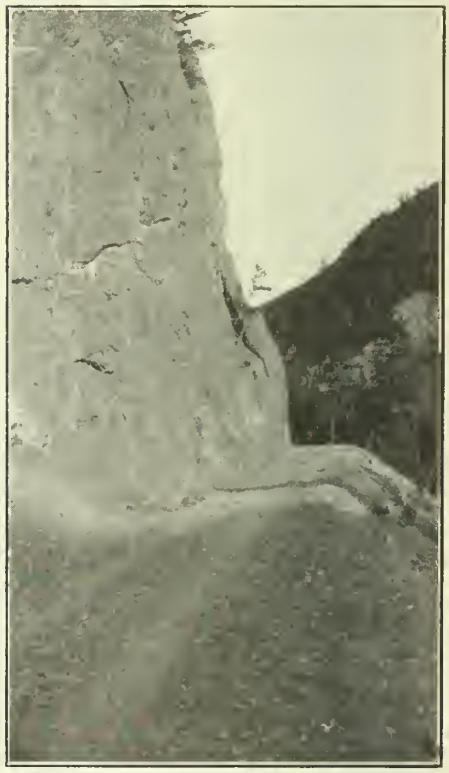
Prince Edward Island.—The Province is divided into thirty-eight road divisions, with an average of about 100 miles or road in each. The roads are all under Provincial control and the Department of Public Works provides the road machinery and constructs and keeps the highways in repair. The soil is of a soft, loamy nature and can be easily handled by machinery. There is practically no macadamizing or permanent road building. The total amount spent on the roads of the Province each year is $30,000, or approximately $8.00 per mile.

Every Canadian should be interested in good roads. The public highways belong to the whole people and no individual is exempt from their influence whether good or bad. Good roads should be built and maintained out of public moneys. They have a direct bearing on the commercial, industrial and agricultural progress of the community and the nation; they influence in the most direct way the social and intellectual progress of the people. They are a military necessity and a political obligation that no wise Government can afford to ignore. No adequate progress is possible so long as a province or nation labors under the handicap of poor roads in winter and summer, and impassable roads in spring and fall.

Debatable Essentials

The essentials for good roads in Canada are: (1) Provincial control, including construction and maintenance; (2) Abolition of statute labor and kindred systems which are a hundred years behind the times; (3) Permanent

(Continued on page 73.)



This rock is blood-red and is within two miles of Sinclair summit on Sinclair creek. The rocks blasted from the face of the cliff were used as road crown, and the stretch of road is also red.

Entrance to Colony Farm. The rugged timberlands in the background make a fine setting for the level cultivated fields and farm buildings.

The Farmer's Book-keeping

The Business Farmer who Believes in his Profession will know where he Stands Annually

By JOHN T. BARTLETT

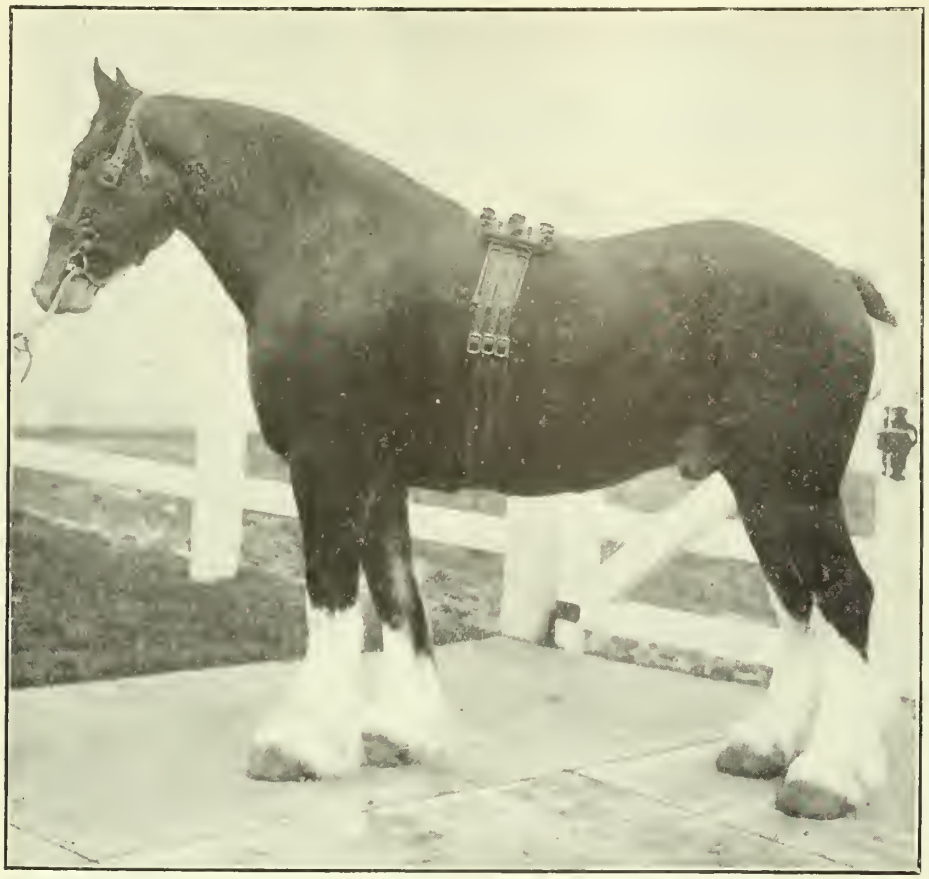
Most farmers regard it as an unnecessary duty to keep any accurate sets of books and to make a yearly inventory of their business. Many farmers' sons are thus totally ignorant of business methods and of their father's standing. For this one reason many leave the farm as a business. It is most important that every working partner of the farm should understand how the affair is going. In imparts confidence in the young man and where there is confidence, drudgery ceases. This example is of a B. C. farmer, while for the accompanying sketch we are indebted to an article from Conservation.—Editor.

THE FARMER can't be told too often that he must be as much a business man as the grocer or hardware dealer. Agriculture as a business is being emphasized more and more by the experimental stations and the colleges created to train young men to be successful farmers. Leaders in this movement for business methods are the agricultural journals, several of which devote their entire space to stories of "business farmers" who have prospered.

Most farmers nowadays admit the necessity of keeping accounts of some sort, but the extent to which they do keep them is, I think, underestimated by Prof. J. A. Bexell, of the Oregon Agricultural College, who declares that most farmers succeed "in spite of their ignorance of business methods, and because of the lavish generosity of Mother Nature." "That farming is a science has been emphasized so much that the fact that it is also a business is often lost sight of," he says. I have conversed with many British Columbia farmers, and the fact which impressed me the most was their ability to talk in figures. They tell me to a cent what it costs them to raise a ton of hay, cut and cure it, bale it, and ship it to market. They know what the interest on investment in land and buildings totals; what it costs them to maintain and build up the soil's fertility. And if they care to be so intimate, they tell me what last year's gross and net incomes were. That is business farming.

I know dairymen who keep careful tab on every receipt and every expenditure, both charged to the proper account; fruit farmers who know at the end of a season their total profit, what orchards, fruits and varieties returned the most, and how much, figured to cents; market gardeners who know what it costs to bleach a bunch of celery, and have like accurate knowledge of every other seemingly trivial thing about their gardens.

There are, of course, exceptions, but they do not stay in business long,—not in British Columbia. The fact is, farming is on an altogether different basis from what it was twenty and thirty years ago. Time was, once, when a lazy farmer could have a roof to shelter him and food wherewith to eat all his life, and, dying, leave his children a mortgage and a worn-out farm. In those days, farming was not a business—it is to-day. Which is precisely the reason why now a farmer can't be careless, can't idle away his life, and still stay in the business.



One of the Clydesdales of Colony Farm from the group that won at the Livestock Show at Chicago as the best exhibit from one stable.

Business farmers are not a theoretical but an actual class. I look for the time to arrive soon when the terms farmer and business farmer will have identical meanings. Already in agriculture the race is swift, the pace hot, and the victory to the keen and calculating. And the winners have automobiles, bath rooms, electric lights, and other once-called luxuries of the successful city man. The prizes are worth the winning.

The bookkeeping of most farmers is of the rough-and-ready kind, practical, it is true, and result getting, yet hardly as efficient as a system particulars of which I shall give. I know a Fraser Valley dairyman who keeps the milk records of his pedigreed cows in pencil on the board walls of his milk house. Most farmers keep their accounts in a five or ten-cent note-book, and for some such simple bookkeeping is entirely satisfactory.

But not for all farmers. Where a man makes his living from mixed farming and hires considerable labor, a system, of farm accounting is really indispensable if the best results are to be secured. It is necessary on one Fraser Valley ranch where 6,000 acres are worked, and on another where a yearly rental of $8,000 is paid. Such enterprises are essentially "big business," and the bookkeeping must be on an accurate, systematic, and sometimes elaborate nature.

The Colony Farm at Essondale, B.C., conducted in connection with the provincial insane asylum, prides itself on two things, its splendid Holsteins—they have no superiors in Canada—and its very efficient system of farm accounting. Both make money for the farm. In October, for instance, twelve yearling Holstein bulls were auctioned off for $2,325, a gross return of 40 per cent. on their dams, the cost of which to the Colony Farm was $5,090. The system of farm accounting, though in its first year, has resulted in profits being made in every department but that of maintenance, which naturally can show nothing but expenditures.

Though bookkeeping had previously played its prominent part in the profitable management of the farm, Mr. Gowan MacGowan, bursar, came to the conclusion that more efficient methods could be employed, and after talking the matter over with Dr. Doherty, medical superintendent, he engaged at the commencement of the current fiscal year a Vancouver accountant, Mr. P. L. McNeill, to work out a system adapted to the Essondale farm's peculiar circumstances. Some farmers may consider the system devolved complicated, but in reality it is not.

The farm was first divided into several departments—horses, cattle and dairy, pasture, crops and maintenance,—to which the total capital investment, including lands, buildings and equipment, was duly distributed. The total land area was determined by survey, the individual plots, each with a definite value and acreage, being assigned to different departments. The same process was followed with buildings and equipment, each of which was considered capital investment. In the accounting, capital in land was charged with interest, and capital in buildings and equipment with both interest and depreciation.

Thus far, any farmer will admit, the accounting system is not terrifying, nor is it, indeed, in its remaining features.

In each department Bursar MacGowan ascertains monthly the following particulars:—(1) the monthly progress of operations, in terms of profit and loss; (2) the total cost of operation; (3) the distribution to the various channels of expenditure of the operating cost; (4) the value of the receipts and output of each department, ascertaining the quantities on hand at any date without taking an inventory of stores in stock; and (5) the total revenue received.

The operative cost in the maintenance department, which shows a paper but not an actual loss, comprises care of buildings, roads, pavements, ditches, drains and fences, all of which are kept in a fine state of repair. Charged to operating cost, also, are expenses in connection with the exhibition of animals.

"The quantities of feed, bedding and medicines consumed in the horse, cattle and dairy departments," states Mr. MacGowan, "are controlled through the use of perpetual stock books located in the feed, cattle and horse barns. These records are very simple and show at a glance the exact quantity of any commodity on hand. In this way the necessity of taking an inventory of the stores in stock is eliminated. The increase and sales of live stock are automatically kept through the use of the perpetual stock books. The births and purchases mark the increase while the deaths and sales mark the decrease."

"How is the milk production recorded?"

"That is controlled through the dairy stock books and shows the quantities of milk produced, as well as the quantities of milk, cream, skim milk, butter and buttermilk perpetually on hand. These books also keep a record of the daily deliveries and of milk transformed with cream and skim milk, and cream churned with butter and butter milk."

The current revenues in the horse, cattle and dairy departments are derived from (1) service of breeding; (2) increase of live stock; (3) profit through sale of live stock; (4) production of milk; and (5) labor of horses.

The channels of expenditure making up the operative cost are interest, depreciation, medicines, feed, bedding, salaries of employees, keep of employees, and labor of patients.

The accounting system I have outlined accomplished wonders at the already profitable Colony Farm, and that it would prove equally as efficient on any large ranch there can be no doubt. Working on that tried and proved principle, "A penny saved is a penny earned," it cuts out the leaks. It pays for electric lights, bath rooms, and other modern conveniences at Essonsdale, and if it were asked to, it would, I believe, purchase that boon to the footsore and weary, the crowning achievement of our age—the automobile.

The Essentials of Farm Book-keeping

What Accounts are Necessary

At least four separate records are essential: (1) an inventory, (2) a cash account, (3) a produce account, (4) a dividend statement. The inventory is a complete schedule of all the assets and liabilities of the farm. It provides us with two indispenable pieces of information: first, the total of the capital investment, on which the interest for the forthcoming year will be computed, and second, by comparison with the inventory of the preceding year, the increase in net worth during the twelve months. The cash account records all receipts and expenditures which are strictly cash. Money received from other sources than from the farm must not be entered in it, unless it is taken care of in a special column. Personal and household expenses must be carefully kept separate from farm expenses. The produce account should show the value of all supplies furnished by the farm to the household. It may also keep a record of produce bought or sold and not paid for at the time. The dividend statement is made annually after completion of the inventory. It takes the material furnished by the other accounts and presents in a condensed form all information necessary to obtain a clear idea of the financial condition of the farm business.

A SPECIMEN INVENTORY.
March 1, 1913.

Assets.		
Land (including fences, drains, well and other improvements) 125 ac. at $40 per acre		$ 5,000 00
Buildings:		
House	$ 1,200 00	
Barns and stable	2,000 00	
Other buildings	550 00	
		3,750 00
Horses:		
1 team heavy horses	450 00	
1 general purpose horse	200 00	
1 year-old filly	100 00	
1 colt	40 00	
		790 00
Cattle:		
20 cows	1,000 00	
5 heifers	150 00	
5 calves	50 00	
		1,200 00
Swine:		
12 pigs	60 00	
2 brood sows	50 00	
		110 00
Poultry:		
60 hens	45 00	
4 roosters	4 00	
5 turkeys	10 00	
		59 00
Implements (depreciated through use):		
Gang plough	23 00	
Walking plough	8 00	
Disc harrow	14 00	
Tooth harrow	9 00	
Fanning mill	15 00	
Seeder (new)	80 00	
Cultivator	21 00	
Mower	27 00	
Hay rake	12 00	
Binder	72 00	
Cream separator	50 00	
Wagon	41 00	
Sleigh	17 00	
Buggy	60 00	
Cutter	26 00	
Harness	80 00	
Other implements and tools (every article should be listed separately)	250 00	
		805 00
Supplies on hand:		
Oats, 300 bu. at 40c	120 00	
Potatoes, 50 bu. at 75c	37 50	
Seed oats, 40 bu. at 75c	30 00	
Seed barley, 12 bu. at 90c	10 80	
Seed corn, 8 bu. at $1.50	12 00	
Hay, 14 tons at $8.00	112 00	
Silage, 45 tons at $2.00	90 00	
Straw, 5 tons at $3.00	15 00	
Manure, 50 tons at $1.00	50 00	
		477 30
Growing wheat (4 acres)		30 00
Cash:		
On hand	55 65	
In bank	632 50	
		688 15
Accounts and bills receivable:		
A. S. McMillan's note for $50, and accrued interest for 2 mo. at 7%	50 58	
H. L. Humphreys, for potatoes	7 50	
		58 08
Total assets		$ 12,967 53
Liabilities.		
Farm mortgage	$ 1,000 00	
Accrued interest on same for 3 mo. at 6%	15 00	
		1,015 00
Net worth		$ 11,952 53

To Arrive at Values

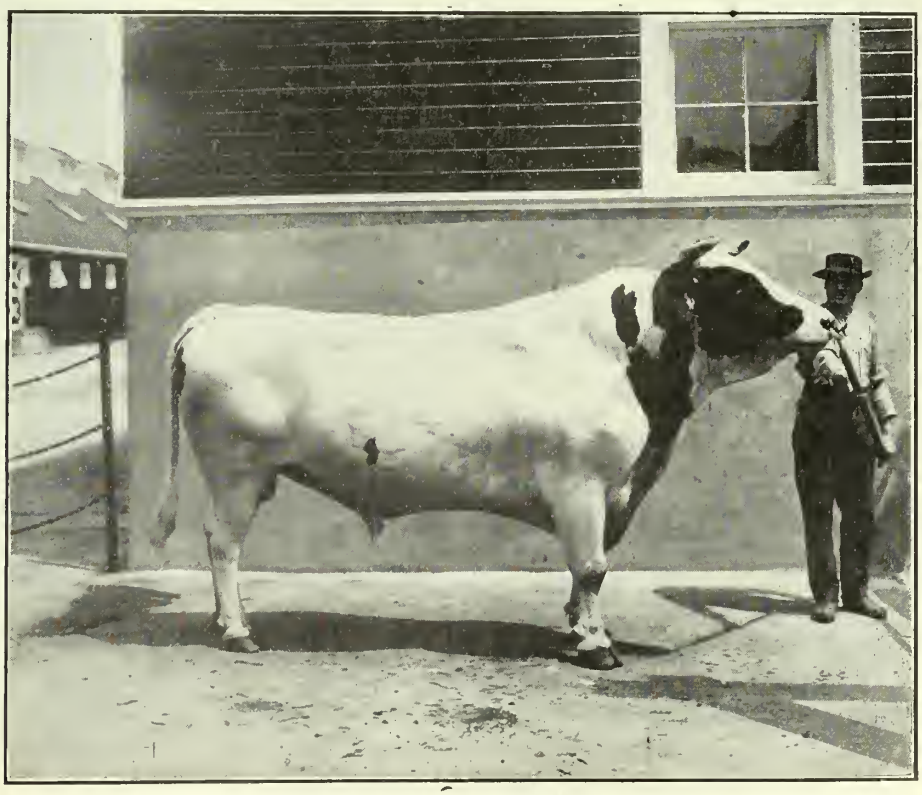
The first question that arises in connection with the annual inventory is the date at which it should be taken. Every farmer must, of course, decide this for himself, but some time during the winter would appear to be the most convenient, because at that season there is no field work to be done, and there are few growing crops, a species of asset whose value it is exceedingly difficult to determine.

The next point to notice is that the value of every asset, save cash and bills receivable, is an estimated value. It becomes necessary, therefore, to consider by what principles we are to be guided in making these estimates. Usually it will be our safest guide to take the price at which a thing can certainly be sold. In the case of real estate, land and buildings are generally, for sale purposes, considered as a unit. To arrive at the value of the land alone, the best way will be to deduct the value of the buildings from the worth of both together. The buildings themselves may be apraised by writing off from their original cost a certain percentage every year for depreciation. This percentage must be based on their durability. If, e.g., a barn be calculated to last, with ordinary repairs, for 50 years, the depreciation would be 2 per cent., so that, at the end of the period, its value would be zero. If any extensive repairs or improvements are made, their cost should be added to the estimate, while, of course, any extraordinary damage, e.g., due to fire, should be deducted. No hard-and-fast rule can be laid down with regard to depreciation, at it depends on so many variable factors, such as the degree of staunchness of the structures concerned, the care taken of them, etc. On most farms, probably about 3 per cent. will be sufficient to allow for depreciation on average buildings.

Up to maturity the value of animals increases and then begins to diminish according to the same rule as dead stock. For example, if a horse comes to maturity in 5 years and may then be expected to live for 13 years longer, he will, theoretically at least, be worth 1-13 less every year from the time he is 5 years old. But nearly all farmers have a fairly accurate idea of how much they can sell an animal for, and are not likely to go far astray in appraising their live stock. The estimates should, however, be conservative, too low rather than too high.

Itemize Small Tools

In making an inventory of implements and tools the golden rule is to go into detail as much as possible. Owing to considerations of space, we cannot, in



With a Holstein header like this on the farm, prosperity is sure to perch on the gates.

the example given, list all the small tools, but it is very important that this should be done in practice. The amount of money invested in minor articles of farm equipment is by no means negligible and they are, moreover, the very articles that are most liable to be lost. A complete inventory, once made, is not difficult to revise year by year, and much better care is likely to be taken of the tools when it is known that they will have to be accounted for at the annual stock-taking. Depreciation on implements and tools may usually be reckoned at 10 per cent. per annum.

The valuation of feed and supplies is not likely to present much difficulty to any farmer who knows his business. Care must be taken not to include household supplies, such as fire-wood, but only those connected with the farm business.

Probably the most difficult item on which to place a value is a growing crop. This is one of the strongest reasons for taking the farm inventory during the winter. The value of the 4 acres of fall wheat, mentioned in the example given, has been arrived at by computing what has been expended on the crop up to March 1st, i.e., the ploughing, harrowing, sowing, seed, etc., as worth about $7.50 per acre. This estimate is taken from the Census and Statistics Monthly for March, 1912. Such a method of valuation seems better than one based on the probable worth of the crop at maturity, which must in any case be a speculative figure.

In estimating the cash, the total of any money received during the year from private sources, must be deducted.

No further remarks on the inventory appear to be required, unless a reminder be necessary that among the items under "Accounts and bills receivable" and "Liabilities" only business, not private debts, should be included.

The form of the cash account is not so important as the principle on which it is kept. As its name implies, its purpose is to keep a record of cash transactions, and of them only. Only such receipts and expenditures as involve the actual paying out or receiving of money, must be entered in it. Indirect gains and losses will be shown by an increase or decrease in the inventory.

The cash account may be balanced as frequently as desired. In the form shown, it is supposed to be balanced monthly. The account is begun by writing at the head of the "Receipts" column the amount of cash on hand and in the bank. At the end of the month another inventory should be taken of the cash, and this should correspond with the difference between the totals of the two sides of the account. If it does not, and if one is absolutely sure that no mistake has been made in the arithmetical work, either some improper entry has been made or some necessary item has been omitted. The more frequently the cash account is balanced, the less liable are such errors to occur.

Private and Household

It will be necessary, when the dividend statement is made out, to know the amount of the farmer's private (i.e., personal and household) expenses during the year, and also his private receipts, if any. It is desirable therefore that all items should be classified as "business" or "private" at the time of entry, and for this purpose two extra columns have been ruled in the form shown. The principle may be still further extended by subdividing the business column into the various departments of the farm. A suggested classification would be: under "Expenditures"—"Stock," "Crops," "Labor," "Implements," "Improvements and repairs," "Sundries;" and under "Receipts"—"Grain," "Hay," "Orchard, garden," "Stock," "Dairy," "Poultry," "Sundries."

Your Bank Account

In a small business it is hardly necessary to keep an extra account with the bank, as the Bank Pass Book is usually sufficient for this purpose. To facilitate reference, however, it will be well, when any payments are made by cheque, to be careful to write full particulars of the transaction upon the stub and to enter the number of the cheque in the cash account in the column shown.

Household and personal expenses need not be itemized. A separate detailed account may be kept for them if desired and then only the totals need be entered in the main account as often as that is balanced.

At the time when sales or purchases are actually made, the amounts may be written in a pocket notebook and subsequently posted in the cash account—the same evening, if at all convenient.

Of the produce account, little need be said except that it is absolutely necessary to keep one if the profit returned from the farm is to be justly and accurately calculated. Its purpose is simply to keep a record of all supplies taken off the farm to be used in the house. In the example shown, a few specimen entries are given, taken at various dates through the year. In practice, it would be well to find the totals and carry them forward month by month or perhaps week by week.

PRODUCE ACCOUNT.

Date.	Supplies Furnished to Household.	Value
Oct. 20	Turkey	$2 00
Oct. 22	Eggs for week, 6 doz. at 40c.	2 40
Oct. 22	Milk for week, 35 qts. at 4½c	1 57
Nov. 10	Firewood, 10 cords at $4 a cord	40 00
Dec. 15	Beef, 300 lbs. at 11c (half carcase)	33 00
Dec. 24	3 chickens	2 25
Jan. 3	16 cwt. flour in exchange for 40 bu. wheat	32 00
July 25	12 qts. strawberries at 7c.	84
Sept. 2	1 bu. table carrots	35

DIVIDEND STATEMENT.

Item.	Inventory, 1912.	Inventory. 1913.
Land, with fences, drains, etc.	$ 4,875 00	$ 5,000 00
Buildings	3,866 00	3,750 00
Horses	725 00	790 00
Cattle	1,240 00	1,200 00
Swine	100 00	110 00
Poultry	53 50	59 00
Implements	832 00	805 00
Supplies	452 50	477 30
Growing wheat	37 50	30 00
Cash	591 25	688 15
Accts. and bills receivable	35 00	58 08
Total investment	$12,807 75	$12,967 53
Mort. and accrued interest	1,522 50	1,015 00
Net worth each year	$11,285 25	$11,952 53
Increase in net worth	$ 667 28	
Personal, household and family expenses	1,086 40	
Year's interest on mortgage of $1,500 at 6%	90 00	
Supplies furnished by farm to household	240 00	
Rent of house (interest at 6% on its value)	72 00	
Gross farm gain		$ 2,155 68
Unpaid personal and family labor	$ 900 00	
Board of hired man	156 00	1,056 00
Dividend		$ 1,099 68

12.80775 | 10996800 | 8.5
10246200
7506000
6403875

$1,099.68 represents a dividend of rather more than 8½ per cent. on an investment of $12,807.75 (as per inventory of March 1, 1912.)

Loss or Gain?

Turning now to the Dividend Statement, the fundamental principle is to discover the gross farm gain and to subtract from this the value of all labor not

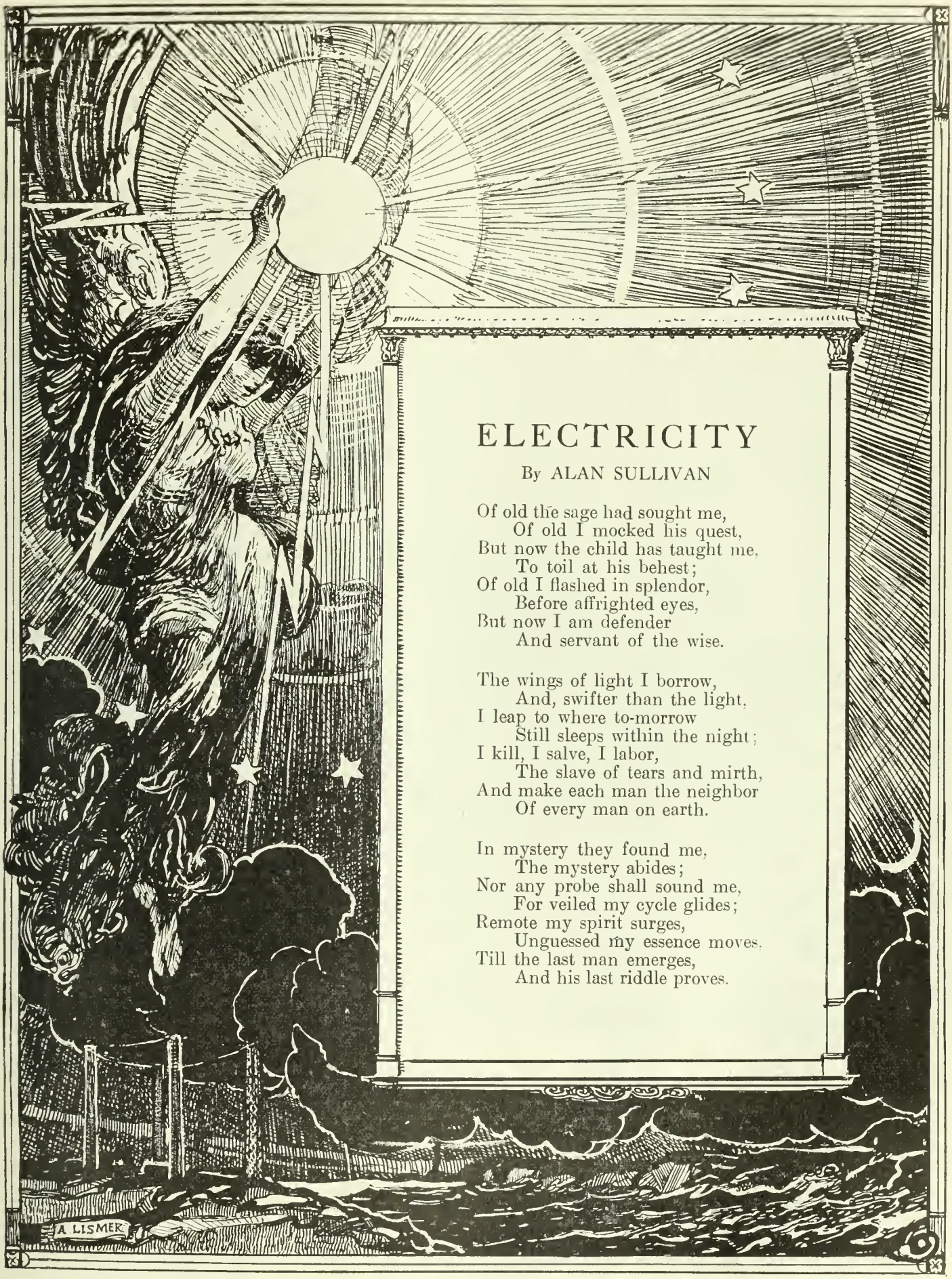
(Continued on page 66.)

CASH ACCOUNT.

Date, 1913.	Receipt.	Amount.	Business.	Private.
April 1	*Cash on hand	$ 63 20		
" 1	*Cash in bank	591 00		
" 2	Cream cheque	102 00	$102 00	
" 5	2 calves sold	20 00	20 00	
" 5	5 doz. eggs	2 00	2 00	
" 12	Div. on creamery stock	50 00	.....	$50 00
" 12	6 doz. eggs	2 10	2 10	
" 19	6 doz. eggs	2 10	2 10	
" 26	7 doz. eggs	2 45	2 45	
" 30	10 bushels potatoes	7 50	7 50	
		$842 35	$138 15	$50 00

*Should preferably be written in red ink.

Date, 1913.	Expenditures.	Ch. No.	Amount.	Business.	Private.
April 1	Man's wages for March.	55	$ 25 00	$ 25 00	
" 5	Household expenses		20 50		$ 20 50
" 5	Monkey wrench		50	50	
" 7	Leghorn rooster		2 00	2 00	
" 15	8 bush. seed corn	56	12 00	12 00	
" 15	Life insurance premium.	57	40 00		40 00
" 19	Household expenses		15 30		15 30
" 19	2 tons bran	58	46 00	46 00	
" 19	Pane for stable window		50	50	
" 23	Personal expenses		17 80		17 80
" 26	Household expenses		22 20		22 20
" 26	Pliers		75	75	
" 26	Padlock		50	50	
" 30	*Cash in bank		600 00		
" 30	*Cash on hand		39 30		
			$842 35	$ 87 25	$115 80



ELECTRICITY

By ALAN SULLIVAN

Of old the sage had sought me,
    Of old I mocked his quest,
But now the child has taught me,
    To toil at his behest;
Of old I flashed in splendor,
    Before affrighted eyes,
But now I am defender
    And servant of the wise.

The wings of light I borrow,
    And, swifter than the light,
I leap to where to-morrow
    Still sleeps within the night;
I kill, I salve, I labor,
    The slave of tears and mirth,
And make each man the neighbor
    Of every man on earth.

In mystery they found me,
    The mystery abides;
Nor any probe shall sound me,
    For veiled my cycle glides;
Remote my spirit surges,
    Unguessed my essence moves,
Till the last man emerges,
    And his last riddle proves.

Greater Love Hath No Man

In the Power of a Madman Who Attempts the Rockies as Napoleon Did the Alps

By H. A. CODY

An incident in the life of the author has suggested this story. Readers of Farmer's are already familiar with the author of the Frontiersman, and will not be disappointed in this tragic yet semi-humorous experience on the trail.—Editor.

A MORE determined band of men never swung pick or threw the diamond hitch than the five who formed the Vigilance Committee of the little mining town of Bull's Eye in the far northland, ere the advent of the Mounted Police. Tim Barker facing them realized what to expect. He had seen others pass before this same tribunal, and knew their fate. He was not surprised, therefore, when the leader, a tall muscular fellow, bronzed and grizzled, brought his fist down upon the rude table with a resounding thud and blurted out at the man standing before him:

"Tim Barker, we given you your choice. Either hit the trail in two hours, or stay here and take your dose."

There was silence in the room after these words, though outside the storm raged with unabated fury. Tim glanced through the small window at the whirling snow and a quiver shook his frame.

"Make up your mind," again roared the leader of the Committee, "and be d— quick about it too; we can't stay here forever."

Once more Tim's face sought the window, and his gaze passed beyond the small dirty panes, through the storm to a little log shack from which a stream of smoke was curling. For an instant he forgot his impatient judges, and saw only a sweet face, and eyes filled with tears, and heard a voice pleading, "Tim, he's young and not strong, so you'll take care of him for Nellie's sake."

"You sneak thief, why don't you answer?" shouted the leader, springing to his feet. "What's the matter with you?"

Tim no longer hesitated; his course was now clear.

"You devils," he cried; "you know nothing about mercy. I'll hit the trail. I'd rather have my life snuffed out in God's great open than let you do it."

Turning, he left the room, and striding rapidly through the storm soon reached the log shack from which the smoke was ascending.

"Tim, oh, Tim, is that you?" a weak voice wailed, as he opened the little door and entered. "Tim, I'm so sorry. What did they do to you?"

"Come, bottle that nonsense," was the reply. "You've done the mischief, and whining won't do any good. Put some grub in yon sack, and be quick about it, too."

"Oh, Tim, what's the matter?" moaned the voice.

"D— you! You know what's the matter. Do as I say, and hurry."

Then he glanced toward the lad standing there, with tears streaming down his cheeks, and there came to him again the pleading words, "Tim, he's young, and not strong. You'll take care of him for Nellie's sake?"

With a groan he sprang forward and grasped the lad's hand.

"Forgive me, Don," he said. "I didn't mean to hurt you. I'm sorry. Say, laddie, I've got to leave, start on the long trail."

With a terrible cry Don leaped to his feet.

"No, no, Tim! I am the thief! I am the one to suffer, and not you!"

But Tim seized him by the shoulder with such a grip that the lad winced.

"Look here, Don. I promised Nellie that I'd take care of you. I know you stole the gold from the cabin, but I'm strong and you are weak. I'll reach the coast over the mountains, and you can come out in the spring. But never breathe a word to a living soul here or they'll skin you alive for a thief and a coward. Come, lad, good bye, I'm off."

Leaving Don huddled upon the rough floor, his form racked with sobs, Tim strode out into the storm, out upon the terrible trail—the long trail of death. For days he moved forward, up a long narrow valley, over numerous inland lakes, ever pressing on toward the mountains far away in the distance. At first he moved with an elastic step, but when his scanty supply of food gave out slow was his progress. Starvation now stared him in the face. He had expected to obtain small game, such as rabbits and ptarmigan, but in this he was disappointed. Weaker and weaker he became as he trudged along through the desolate wilderness. The dazzling snow blinded him by day, the frost stung him at night, whilst the pangs of hunger almost maddened him. His snow-shoes were like great clogs weighing him down, and often he stumbled and only with difficulty regained his feet. His rifle which had been his companion for years, seemed like a ton in weight, and with a sob he laid it aside.

At length he reached a large lake, out upon which he slowly moved. Why he did so he could not tell, only he felt that he must keep in motion as long as he could drag one foot after the other. It was night and the stars gleamed and twinkled coldly overhead, mocking him, so he imagined. Everything was as still as death—unbearable. He felt he would go mad. Presently he paused. What was that? There was something moving over the snow, gliding toward him. Another, and then a third, he could see their dim forms. Nearer and nearer they came, swift as the rush of doom. In an instant the truth flashed upon him, they were starving wolves. He forgot his weariness, hunger, and despair. The love of life still burned within him. He grasped his revolver, he would fight to the last. The dark forms came closer, and he fired once, twice. They paused only for an instant, when the leader, big brute that he was, sprang upon him. Just in time the revolver spoke again, and a sharp yell tore the night air, and the animal fell struggling upon the snow. Sickening, snarling sounds told of the fate of the fallen beast, for the law of the wild knows no mercy. His two companions fell upon him, and their sharp teeth tore the quivering flesh into shreds.

Tim did not wait but hurried forward. But, alas, his renewed strength could not continue, and ere long he felt weaker than ever. His head reeled, his knees trembled. His snowshoes were so heavy that he tore them from his feet. Then he crawled upon his knees. He would reach the shore, and die there in the shelter of the trees, and not out upon that lonely lake.

"Nellie, Nellie!" he cried, but no response came to his piteous appeal.

Then he strained his blurred eyes through the darkness, as if to see a light or something to cheer him. And as he looked a gleam rose before him on the shore not far away. A new hope now filled his heart, and once more he struggled forward. He regained his feet. He reeled to and fro and staggered like a drunken man. He could go no farther. Must he die there in the very presence of help! He lifted up his voice in one wild call for assistance. Presently a door opened, and a figure stood before him. With a last desperate effort he crawled forward, he reached the door, wriggled himself over the threshold, and fell senseless within.

When consciousness returned he found himself lying upon a rude bunk in a small room. Standing by his side was a man tall and large, with long hair, and a beard falling to his waist. He was eyeing him with an expression Tim did not like.

"Who are you?" he asked in a tired voice, as he made an effort to rise.

But the large man answered not a word but stood there with a terrible look in his eyes. A chill passed through Tim's body, and once again he asked,

"For God's sake tell me who you are! Why don't you speak?"

"Often he would stop and shout to the surrounding mountains."

"You are my prisoner," at length came in deep guttural tones from the giant.

"Your prisoner!" Tim exclaimed, "What do you mean?"

"I am Napoleon," the man replied. "I am the Emperor of the world, and I have captured you at last."

Then the terrible truth dawned upon Barker's mind. The man was mad, the victim of a delusion. He had escaped both storm and wolves only to fall into the hands of this creature. It was fearful, and beads of perspiration broke out upon his forehead as he thought of his position. What was he to do? He was weak through long fasting, and his body must be strengthened if he expected to contend with the towering form before him. Looking around the room he saw a piece of moose meat on a small table. He made an effort to rise, but the giant laid a strong hand upon him, and glared more fiercely than ever.

"I am hungry, starving," said Tim. "For God's sake give me a piece of that meat."

The giant put his hand to his forehead, as if trying to recall a lost chord of memory. Then without a word he crossed the room, cut off a large slice of the meat, and began to prepare it over the coals which were glowing in the rude fire-place. The smell of the cooking meat almost maddened the starved man, and it seemed a long time before his strange host handed to him the piece of cooked meat upon an old granite iron plate. Tim now breathed more freely. The man was not as mad as he had imagined. This idea was quickly dispelled, however, for no sooner had Tim begun to eat than the giant again broke forth in wild language.

"I am Napoleon, and you are my prisoner. Eat and be merry, for to-morrow you die. You are a spy sent here to find me out. But you shall never leave this place alive."

And eat Tim did, for his only hope lay in his renewed strength, and he wasted no time in mournful reflexions. Then the giant began to call aloud, at the same time shouting forth strange orders.

"Ho there menials," he roared. "I am Napoleon, and my prisoner shall have the best the land affords."

He next called for his officers, and a triumphant smile passed over his face as he pointed across the room.

"Look, there they stand, as fine a body of men as ever trod earth or drew sword. And see my soldiers marching by. They know their Emperor, and are saluting me. Don't you see their helmets gleaming? What noble fellows they are, one hundred thousand in all, and I their leader. We shall conquer, yes conquer the world, ha, ha!"

He was standing erect as he finished this harangue. He saw the whole thing; it was wonderfully real to him. He was the Emperor; his servants were serving him; his officers were standing by waiting to obey his slightest command, and one hundred thousand men were passing before him ready to do and to die. And thus all through the night the giant continued to give his wild orders to imaginary people. Toward morning when daylight dawned he threw himself upon the floor, and slept long and heavily.

Barker remained awake for some time engaged in earnest thought. He knew that the man was a prospector by various mining tools he saw in the cabin. The lonely life, and long dark nights had evidently deranged his mind, an occurrence only too common in the north. The man was asleep and it was hard to tell what he might do when he awoke. A sudden thought came into his mind. A knife lay near and it would not take much strength. He banished the idea, however, with a shudder. No, he could not do such a cowardly thing.

Thinking thus he fell asleep, and when he again opened his eyes the day was far advanced. The giant was standing before him, eagerly awaiting his awakening, and grasping in his hand a large sharp-pointed knife. His eyes glowed like two fiery rockets, and when he opened his mouth to speak his words came forth in a deep guttural roar.

"Now, spy, I've got you at last. You shall not escape me this time. Your hour of doom is come. Napoleon, the Emperor of the world, stands before you; his army is waiting, and you must die."

It was certainly a critical moment for Tim. The slightest movement on his part would hasten the blow. He was too weak to spring out of the bunk, and it would be the utmost folly to attempt a struggle with the creature before him. What was he to do? He was one hundred miles from the coast, with a rugged mountain between, alone with a raving maniac. As he lay there almost entranced by the sight before him a thought suddenly flashed through his brain. It was his only chance, and he seized it as a drowning man clutches at a floating oar. Turning his eyes toward the opposite wall he stared as if in the greatest amazement.

"Look, look, mighty Emperor!" he cried, "there is Italy. Don't you see your enemies forming to attack you? They are ready to fall upon you to destroy you. See, the Alps rise before you. Lead forward your men over the mountains, and I will be your guide."

A cunning expression now came into the giant's eyes, and slowly he lowered the glittering knife as he turned his face in the direction of Tim's pointing finger. He saw the whole picture most vividly and at once a desire seized him to attack his enemy.

"Lead on," he shouted, "and I will follow. Ho, soldiers, make ready to march upon Italy."

"Great Emperor," said Tim, "it will take two days to break up camp and prepare for the march. One thousand men cannot undertake to advance over the Alps at a moment's notice."

This was his only hope now. He was too weak to travel, and the rest of two days would be needed for the great struggle over the mountain pass. He hardly expected that his words would have any effect upon the excited man before him. He was, therefore, much relieved when the giant at once turned and ordered his men to break up camp and be prepared to start in two days.

Terrible was this time of waiting to the anxious Barker. The giant was ever on the move giving incessant orders to the four walls of the room. Their supply of provisions was getting low and it was necessary to get away as soon as possible. On the morning of the third day they drew out from the little cabin, with snow-shoes on their feet, and their scanty supply of food strapped securely upon Tim's back. And then the struggle began. Up and ever up they moved through a long winding valley, where the mountains towered above them on every side. Slow was their progress for Tim was still weak and the madman spent much of time in giving wild orders. Often he would stop and shout to the surrounding mountains:

"Look how they march! Watch them climb! I am Napoleon, and they are my men. We will conquer Italy, ha, ha!"

Thus day after day they pressed onward along that cruel way. Nearing the summit a furious storm burst upon them blotting everything out of sight in its merciless sweep. They could not face it, though for a time Tim struggled forward leading the giant who was now as quiet as a child. But it was no use, and they were forced to take shelter behind a huge ledge of rocks which fortunately was near. Here they waited until the storm beat itself out, and then weary and cold continued on their way. Everything around them was as still as death. There was a dazzling whiteness everywhere.

At length the summit was reached and a magnificent view was obtained of the surrounding country. Down below stood a fine forest, beyond which nestled an Indian village. Tim could see clouds of smoke curling into the frosty air from numerous cabins. Far beyond stretched the cold waters of the North Pacific Ocean. And standing there on the face of the mountain Tim forgot his companion. A prayer of thankfulness went up from his heart. He believed that he was saved, and at once there arose before him a vision of Nellie waiting to receive him.

Instantly this vision was dispelled for with a roar as of a wild beast the madman was upon him. Terrible was the giant's strength, and though Tim fought and struggled desperately he was as a child in the creature's grasp, who crushed him in the snow, and then clutched savagely at his throat. The helpless man felt that his end had come. A blackness rose before his eyes and he ceased his struggles. Suddenly the terrible grip relaxed, the giant was hurled fram his body like a rocket, and amidst tumbling, tossing snow Tim felt himself borne on, down, down, he could not tell where. He knew that it was a snow-slide, which is so common in the north after a heavy storm. He had often looked upon the grand spectacle from a safe distance. He had seen the mighty onward rush down to the valley below, and then when the timber-line was reached the crash would take place, and the snow would

(Continued on page 80.)

The Farm Dairy Era

Farm Mothers of the Last Generation Advised their Daughters not to Marry a Farmer

By PROF. H. H. DEAN

Prof. Dean in the beginning of his series of three articles for Farmer's Magazine, outlines them in these words: "The history of dairying in the Province of Ontario may be conveniently divided into three eras or periods—the era of the farm dairy previous to 1864; the cheese era from 1864 to 1913, a period of 50 years; the present era of city milk and cream trade, including ice cream manufacture; the rise of the milk condenser and milk powder plants, and the rejuvenation of the creamery industry brought about by a marked increase in the value of live-stock of all kinds, which depend upon milk to a great extent for a good start." This is the first in his series and should be preserved.—Editor.

THE WRITER appeared on the scene at the close of the Farm Dairy Era, and at the beginning of the second or Cheese Era, hence has personal knowledge of both to a limited extent. We need to know or imagine the conditions during the first period in order to have a correct idea of dairying as carried on at this time. The farms were only partially cleared in many districts and the cows pastured in the "slashings," their owners keeping tab on their wanderings by means of a cow-bell placed about the neck of a leader in the herd. We all remember the delightful, and humorous description of an Irishman lost in the Canadian woods, frightened by the cries of the owls and whip-poor-wills, and who finally reached a clearing by firmly grasping the tail of an old cow, and hanging on, keeping step to the tune of a cow-bell attached to Bossy's neck.

How vividly the scene is brought on before us.

In winter, instead of corn silage, roots, hay and meal, the cows browsed in the woods and came out in the spring in fairly good condition in spite of the hardships of a Canadian winter. No tuberculosis in those days, as cows lived in the open air, not in stuffy, bank-barn stables, breathing a vitiated atmosphere. Occasionally cows would have to be "tailed-up" in the spring, but not often. The "tailing-up" process consisted of the owner and a neighbor or two lifting the cow to her feet by pulling on the tail, the cow being too weak to rise by her own efforts.

Cows gave little or no milk in winter. The farmer's family either had no milk as a rule, or they purchased it from a lucky neighbor. The winter's supply of butter had been packed in crocks during the previous summer. Before spring this butter usually became quite "strong" as some remarked, "strong enough to walk up out of the cellar alone, if it got a chance." However, it was so heavily salted in most cases, that the "strong" taste was overcome to a large extent by the excessive salt flavor.

Women were the First Dairymen

The calves all came in the spring and early summer. The sires were invariably a scrub, wayside bull. The heifers reared for milk cows were indifferent milkers because of the law of cross inheritance which declares that the milking qualities in a cow are largely inherited from the sire and only to a limited extent from the dam. The same holds good with reference to egg-laying quality in poultry. It will be seen also in the human family—great men have almost invariably had great women for mothers. The human race can be most quickly and effectively improved by education of the women, whose improved qualities will then be transmitted to their sons. The present movement for the emancipation of women is but a race expression of the almost universal desire of mankind to improve. It is possession of this upward principle in a more marked degree than in any other class of animals, which differentiates man from the so-called lower orders of life. It is useless for man to kick against the pricks.

"The butter was dipped from the buttermilk into a butter-bowl, probably hollowed from a log, the coarse salt was added and the butter worked with a short-handled ladle (also made by the farmer with his ever handy jack-knife)."

To return; and we have not far to go. In the pre-factory stage, the women were responsible for the making of the butter, which was about the only dairy product manufactured at that time; and also on many farms, women were expected to assist with or do all the milking. The men were either too busy or too tired to milk cows, hence this task fell to the lot of the already overworked farmer's wife. In those days it was literally true:

"Man works from sun to sun,
But woman's work is never done."

Corralled in a Fence Corner

Let us look at the conditions under which the butter was made in this formative period of dairying in the Banner Province of the Dominion of Canada. After the cows had been captured in woods or slashing, they were corralled in some fence corner, or small lot, where they were milked in fair weather and in foul, by the women, who were obliged to kneel or squat on the dry, and also on the damp ground; or possibly were able to sit on an upturned pail, or if the men were exceedingly good-natured and had a turn for carpentering, they might be provided with a stool of home manufacture.

In fine weather milking was not such a "bad job," but in the rainy season, there was no place to put the cow, and the milker was frequently "soaked to the skin," while a miniature Niagara of water poured from old "Line-Back's" loin and side, into the milk-pail, making chocolate streaks in the foamy white milk. But what could the milker do to prevent this? It was impossible to milk the cow and hold an umbrella at the same time, even had there been an umbrella to hold. In early winter, when possibly some of the late-freshened cows were giving a little milk, they had to be milked around the straw stack, where the cows were supposed to winter well, or at least better than if "browsing" in the woods. No wonder these pioneer women grew tired of the farm and advised their daughters "never to marry a farmer," with what disastrous results we see to-day.

Use Bass-wood Pans

To obtain the cream in early days the milk was set in wooden troughs, hewed from a brass-wood log after the fashion of the wooden sap and rainwater troughs which we all remember seeing in our youth. These wooden vessels were difficult to keep clean. Next came earthen pans and crocks of the unglazed type, similar to the modern flower pot. These

too were porous and difficult to clean. Glazing of milk crockeryware came next, which was a great improvement, so far as ease in cleaning is concerned. The tin shallow pan, having seams was the next improvement in a creaming vessel, following which came at the close of this Era, or the beginning of the next, pans pressed from a block of tin without seams; and these together with enamelledware pans are used to-day for creaming milk, by which the finest butter can be made—butter that will equal that made by using a cream separator, if the conditions are right, such as a clean, cool cellar, having a pure atmosphere, skimming while sweet, etc.

Whiskers on the Cream

To ripen the cream obtained from wooden, earthen, or tin vessels which were set in cellar, pantry, kitchen or milkhouse if there was such on the farm, was a simple matter. In most cases the cream was sour or ripe when removed from the milk, and unless it was churned at once would be too sour, and in many cases mouldy before it was churned. It was a common joke in those days to speak of "The whiskers on the Cream." The fine threads of the mould spores looked, to the early settlers, like whiskers," as the science of bacteriology or knowledge of the lower forms of plant life, was practically unknown. Such a thing as "cultures" or "starters" had never been dreamed of, although the farmer's wife had a practical knowledge of the yeast plant, and knew how to use it in the making of fine bread. The modern method of cream ripening belongs to a type of work similar to the use of yeast in bread-making. Its principles are the same.

Churning was done as soon as there was sufficient cream collected for a churning, if the busy wife had time to do the churning, or if she could coax, or scold one of the men into giving a hand, the old dash churn was got out, scalded, cream put in, apron was tied about the ample waist of the husband or hired man or pinned at the sides, for what purpose it would be hard to discover, certainly not to protect his pants from the cream, more likely to protect the cream from the pants, although she would never even hint at such a thing—and the thud of the dasher in the farm kitchen showed that churning had begun.

When the dasher would stand on top of the butter, then captured husband, son or hired man was allowed to go, and the remainder of the butter-making was attended to between washing dishes, sweeping floors, tending the baby and getting dinner ready for the hungry men. No wonder women sometimes did a little scolding at meal times, which is about the only time a woman gets a fair chance at a man. At other times men get out of the road, but who ever knew a man to leave a good meal for anything less than a fire or an earthquake?

The butter was dipped from the buttermilk into a butter-bowl, probably hollowed from a log, the coarse salt was added, and the butter was worked with an old-fashioned short-handled ladle (also made by the farmer with his ever-handy jack-knife), until the buttermilk was squeezed out and the salt mixed through the butter. The finished butter may have been a little "milky" and somewhat "gritty," but tastes were not so particular and well cultivated in those times as at present.

Taking it Out in Trade

The surplus butter was marketed at the country store or nearby town. No cash was paid. It was a case of bartering butter for tea, tobacco, sugar, calico, shoes, nails, salt, hard-soap (soft soap was made on the farm from ashes and grease), forks, shovels and occasionally some finery, such as lace, linen, collars, or other piece of personal adornment for the women folk.

Sometimes this butter was good—real good, and the store-keeper used the

The old dash churn was got out, scalded, cream put in, and the thud of the dasher in the farm kitchen told that churning had begun.

butter on his table or sold it to his best customers. More often it was unfit for table use, either at the time of delivery or soon after it had been deposited in the store cellar along with wool, coal-oil, harness-oil, tobacco and various other strong - smelling commodities which quickly imparted their flavors to the sensitive butter.

On certain days of the week the store-keeper, and one or more of his assistants or clerks in the store, clad in greasy suits, sorted the various lots of butter according to color, placing the highly-colored lots in one pile, the "yaller" in another, and the whiter in another. These were then mixed or blended, according to the three shades of color, on a large mixer, and when the shades were as uniform as it was possible to make them, and the whole a greasy mass, the butter was packed in barrels, shoe boxes or anything else convenient for shipping to Toronto or Montreal, where much of it found its way to the soap factories in Canada or England. This was the inglorious end of a great deal of farm dairy butter during the first era of the dairy industry. It is a tale of hard work, a poor article, and small returns. But these were days when too much was not expected by the farmer, and he has not yet entirely got over the spirit of, "small mercies thankfully received."

But a brighter day was dawning. Better cattle were beginning to be kept; they were fed and cared for in a better manner, larger milk yields were received; the herds of cows were larger, and the question naturally came up, what shall we do with this large amount of milk? The co-operative cheese-factory was the solution of the problem.

(The next of this series will appear in the March number and give an account of the Cheese Factory Era.—Editor.)

Paper Dishcloth is a Success

New paper products are brought out from time to time which are most interesting. One of the latest offerings is the paper dishcloth, made of stiff parchment, which in water becomes as soft and pliable as fabric and will not go to pieces. It is used as an ordinary piece of cloth and then washed, wrung out and dried, and used again. It has a smooth surface which absorbs no grease. It is equally good for scouring pots and pans and may be used with any of the cleaners marketed for that purpose. One dishrag of paper is sufficient for any dishwashing from cut glass to skillet. Then it is washed off, and is again fresh and clean. When it dries it again becomes stiff, but is not yellow or soiled, but fresh and white as when new. A new form of cooker is a metal frame which is lined with a prepared paper. This cooker acts equally well with roasts, vegetables, bread, or cake. The metal frame prevents the paper from breaking when removed from the oven, and the paper lining retains all the juices and flavors, and gives the slow, thorough cooking so much desired. The food never touches the metal; there are no greasy pans to wash and simply the lining to be thrown away.

There are a thousand "successful" men for one that is contented.

Habit tends to make us permanently what we are for the moment.

Other things being equal, it is the noblest man or woman who puts the highest and noblest estimate upon others.

—Dr. Marden.

Spanish Gold

A Story of a Search in Ireland for Hidden Spanish Treasure Where the Quaintest of Humor Pervades a Pleasing Romance

By GEORGE A. BIRMINGHAM

CHAPTER VI.—Continued.

"I see nothing of the sort. My lies, as you call them, got rid of that troublesome old fool, who might have gone on following us all day. Also they secured us this excellent crab, which I shall cook for supper to-night. And anyhow, they aren't lies. They are what is called diplomacy, and that's an art practised by the most honorable men—lords and marquises, and kings, and people of that kind. Do you suppose that the Prime Minister, when he thinks he'll have to go to war with Germany, tells the literal truth? Does he go and ask to have the first battle put off for a week because he's short of cartridges? Of course he doesn't. He gives the Germans to understand that England is chock full of cartridges of all sizes. The fewer he really has the more he says he has. That's diplomacy, and it's reckoned to be a very noble line of life. Well, the principle applies to treasure-seeking just as much as to international politics. No treasure would ever have been found if the people who were on the track of it went telling all they knew to every chance acquaintance. They simply have to put the general public—people like Higginbotham and Thomas O'Flaherty Pat—off the scent, and there's no way of doing that except the one. Besides, it wouldn't be the slightest use telling the literal truth. People wouldn't believe you. Suppose I went up to Higginbotham and said that you and I were here on a treasure hunt. Do you think he'd believe it? Not he. He'd laugh. He hasn't got enough imagination to believe the truth if you hung it up before him. His mind isn't fit for it. If you knew any theology, Major, you'd understand that economy, as it's called, consists of dealing out to the average man just the amount of truth he's fit to receive, and no more. The Church has always gone on that principle, and I'm acting in the same way towards Higginbotham and Thomas O'Flaherty."

CHAPTER VII.

Meldon, encouraging the reluctant Major by example and exhortation, continued to scramble southwards along the base of the cliffs. It grew very hot. Now and then Major Kent sat down, mopped his face, and declared that he would go no further. On such occasions Meldon lit his pipe and argued with his friend. It always ended in the Major going on, slipping, staggering, clutching. At last

Synopsis of Previous Chapters

The Rev. John Joseph Meldon, a genial Irish curate, and his friend, Major Kent, of Ballymoy, a village on the west coast of Ireland, take a trip to the Island of Inishgowlan in search of treasure supposed to have been hidden there by a captain of one of the vessels belonging to the Spanish Armada. The major does not believe in the existence of the treasure, but Meldon is very sanguine.

On arriving at the Island they meet Higginbotham, an old college chum of Meldon's. Higginbotham is engaged in surveying the island for the Government and arranging for sanitary dwellings to be built there. Meldon not wishing to mention the cause of their visit tells Higginbotham that the major is an expert mineralogist sent by the Government to explore the island. The following day Meldon and the major start to explore the island but find that one of the inhabitants, an old man named Thomas O'Flaherty Pat, is following them everywhere they go. Meldon to put him off the scent pretends to be hunting for sea beetles and finally induces the old man to leave them.

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he sat down with an air of great determination.

"J. J.," he said, "the tide has turned. I'm going back. We've passed some nasty corners, places we couldn't get round at half-tide. I've no fancy for being drowned. You know I can't swim."

"All right," said Meldon, "trust me. I'll pull you through."

"If you mean that you propose to save my life in a heroic manner and get credit and perhaps medals for it afterwards, I tell you plainly that I don't mean to give you the chance. I'm going home the way I came, partly on my two feet, partly on my hands and knees. I'm not going to be towed about the sea to gratify your vanity."

"The place I'm going to is just ahead of us. It's the very next promontory. We've time enough to get round it. You'll be sorry, Major, if you go back now."

The Major rose with a sigh, and followed Meldon to a headland which jutted further out into the sea than any they had passed. It was very difficult to get round it. The sea washed almost against the base of the precipitous rocks. There was no more than a narrow ledge, three or four feet above the level of the water, along which it was possible to walk; and even there it was necessary to press close to the side of the cliff. Once round the point, a long, narrow inlet opened before them. It was, even at the entrance, not more than thirty feet across, and it narrowed as it reached inland. On the south side of the channel the rocks rose sheer out of the water to a height of thirty or forty feet. Above them was a steep slope of short, wiry grass. On the north side, where Meldon and the Major stood, the cliff rose less precipitously, and it was possible to scramble along for a short distance. The tide was almost at death ebb, and at the end of the channel the water lapped on a tiny beach, surrounded closely on three sides by cliffs. At the shoreward end of the beach, a few feet from the water, was a small hole, hardly to be dignified by the name of cave. It was evident that when the tide rose a little the water would reach the hole, and that at half-tide the entrance to it would be entirely covered.

Meldon gazed down the channel and saw the hole in the cliff. His face wore a look of intense satisfaction. Major Kent also seemed pleased. He gave a sigh expressive of relief.

"Now," he said, "we're stuck and we can't go any further. We've reached the last rock on which it is possible to climb, and I can neither swim nor fly. Suppose we start to go back?"

Meldon sat down and began to take off his boots.

"This," he said, "is the scene of the shipwreck, and in that hole the Spanish captain concealed his treasure. Reconstruct the scene for yourself, Major. The galleon, partially disabled by the loss of one or more of her masts, comes driving down on the island before a nor'-westerly gale. I gave you my reasons for saying the wind was nor'-west, so we needn't go into that again. Where does she strike? On the point we've just passed. It's the furthest sticking-out point there is, so of course she struck on it. You follow me so far? What happens next?"

Meldon, having got rid of his boots and socks, stood up while he took off his coat and waistcoat.

"What are you going to do?" said the Major.

"Swim to the end of the channel, of course, and see what's inside that hole. You can stay here and mind my clothes. But to go on where you interrupted me. Where was I? Oh, yes. The galleon had just struck on the point. What happens next? A great sea lifts her stern and slews it around. Her bow slips off the ledge of rock over which we walked—it would be about half-tide when the thing happened—and the galleon drifts stern foremost into this channel and sticks fast just where we're standing now. You follow me all right, don't you?"

"It's very interesting," said the Major, "but I don't suppose for a moment it's true."

"Of course it's true. It's what must have happened. Don't you see that under the circumstances nothing else could happen? Tell me this, now—if a wave, with a nor'-west wind, lifted the stern of the galleon round in the way I have described, what could the old hooker do but go stern first along this channel until she struck?"

"Oh, I dare say that's right enough, but there's such a lot went before that."

"Have you any other hypothesis which meets the facts of the case better? No. Very well, then, accept mine. That's the way all scientific advance is made. Some Johnny with brains produces a hypothesis. Everybody calls him a rotter at first. But he remains calm in the face of opprobrium."

"I'm the opprobrium, I suppose," said the Major.

"Well, in this case you represent the opprobrient. But to go on. What does the scientific Johnny do next??"

"You needn't go on."

"Oh, but I will. I read the whole thing up at college in Mill's Logic when I was thinking of going in for honors. I was young then. The scientific Johnny says, 'Take my hypothesis. If it doesn't account for the facts give it the chuck out; but if it does, then stop scoffing and get ready a statue to erect in my honor.' Now, what I say is this, Does my hypothesis cover the facts? There now, you've kicked one of my socks into a pool. I do wish you wouldn't fidget in a place like this. There isn't room for a display of temper."

Meldon got his shirt off and stood poised on the edge of the rock for his plunge. "I'll finish explaining what happened when I get back," he said. "I won't be long. Hallo! Who's that? Oh, Great Scott!"

He pointed with his finger to the top of the grassy slope which crowned the cliff opposite him. The Major looked upwards and saw, seated above the hole, Thomas O'Flaherty Pat. The old man, his hair and beard blown in picturesque wisps by the sea-breeze, was watching Meldon with a calm, disinterested gaze."

"What are you going to do now?" asked the Major.

"I'm going home again for to-day," said Meldon, clutching at his shirt. "I'm not going on with that old boy watching me. I tell you he knows what we are after. He can't have believed that story about the Athalonia miserabilis. What horrid sceptics these unsophisticated-looking people are in their hearts!"

"He'd have been a precious ass if he had believed it. You give nobody credit for any intelligence, J. J. You invent stories which wouldn't deceive a babe in arms, and then expect people to be taken in by them."

"Well," said Meldon, "Higginbotham believed much taller stories than that one."

"I knew you were going too far with that sea-insect of yours. Why couldn't you have invented something more likely if you had to invent?"

"Oh, well, if we're going to enter upon a course of mutual recrimination, why couldn't you have refrained from kicking my sock into a pool?"

Meldon was pulling his boot over the damp garment, and spoke feelingly.

"But never mind, Major, I'm not by any means at the end of my tether yet. To-morrow we'll come back here at low tide and I'll swim to the hole then."

"What about Thomas O'Flaherty Pat? He'll follow us again."

"Oh, no, he won't. I'll manage him."

"How?"

"That'll be all right, Major. You leave it to me. If I say I'll manage him, you may take it as a fixed thing that he'll be managed. I can't tell you just this moment how I'm going to do it. I shall have to think the matter out by myself. But you may feel perfectly certain that it'll be all right. I've not done badly so far, have I?"

"In the matter of lies," said the Major, "you've shown an inventive power which has surprised me."

"Don't call them lies; call them disguises. Nine fellows out of every ten who go out treasure-seeking have to adopt some sort of disguise, and it's always considered quite right. Now, what's the difference, the moral difference, between a detective——"

"We're not detectives."

"The principle is exactly the same—between the detective getting himself up as a dock laborer in order to deceive the wily criminal, and our saying that we're bug hunters in order to put old T. O. P. off the scent? There's no earthly difference that I can see; so there's no use being offensive and talking about lies. Come on, now. I'm dressed, and we ought to be getting back before the tide rises."

"I said so an hour ago."

"Apart altogether from the disguises that we've been compelled to adopt," said Meldon, when they had scrambled round the point and conversation became possible again, "I maintain that I've done pretty well so far."

"I don't see that you've done anything except cut a hole in the knee of your best trousers."

"They're not my best; they're the oldest pair I have. I bought them two years before I was ordained. That's how they come to be the color they are."

Mr. Meldon meant that the date of their purchase explained their having once been light grey. It also explained the fact that they were now considerably faded and mottled with a fine variety of stains.

"But leaving my trousers out of the question," he went on, "I think I've done a good deal. I've located to a certainty the exact scene of the wreck; I've reconstructed the catastrophe precisely as it happened, and I'm practically sure I know where the treasure was hidden."

"Oh, you're sure of that, are you?"

"Practically sure, is what I said. I don't set up to be infallible. The best men may make mistakes. Listen to me, now, till I explain. The galleon is lying jammed in that channel. The water is, of course, comparatively calm there on account of the shelter of the headland. The Spanish captain, not being a fool—we agreed from the first, you remember, that the Spanish captain wasn't an absolute fool—sees that there is no immediate danger of the galleon breaking up. These Spanish galleons were all pretty tough. You remember the one that came ashore on Robinson Crusoe's Island. It was pretty tough, and so was our one. Well, what does the Spanish captain do? He lowers his one remaining boat over the stern of the galleon and ferries his treasure into the mouth of the hole in the cliff. Then he drags it inland as far as the hole goes, maybe twenty yards or so. Afterwards he and the survivors of the crew landed just where we were standing, scrambled round the rocks—by that time it would be dead low water—very likely go up the same path that Thomas Flaherty Pat came down to meet us. Now what do you say to that?"

"I don't say anything," said the Major.

"No, you don't. You save yourself up so as to say, 'I told you so,' in case there happens to be any trifling miscalculation. Or if, as is far more likely, I turn out to be perfectly right, then you're in a position to pretend you agreed with me all along. But it's waste of breath talking to you."

"It is," said the Major.

"I'm glad you agree with me there, anyhow. Here's Thomas O'Flaherty Pat's path. Let's go up it and get back to the Spindrift. I'm as hungry as a wolf. That's the worst of breakfasting so early. By the way, where's the crab?"

"What crab?"

"The large red crab that old Tommy Pat caught and gave to me. Major, have you left it behind?"

"I never had it. If anybody's left it behind it was you. You were carrying it."

"But I told you to mind it while I swam up the channel."

"You did not."

"Well, I meant to, and anyway you ought to have known. How was I to go swimming with a large crab in my hand? Of course you ought to have minded it,"

"I'm sorry," said the Major.

"Oh, well, it doesn't much matter. I don't so much care about the crab itself. I dare say we shouldn't have been able to cook it properly even if we had it. What I'm thinking of is poor old T. O. P.'s feelings. I'm afraid he'll be hurt if he sees us coming back without his crab."

"I shouldn't fret about that if I were you."

"Oh, but I do. It's not altogether Patsy Tom O'Flaherty's feelings that I mind. But on these occasions you ought always to try to win the goodwill and the confidence of the natives."

"You go a queer way about it, then, if that's what you want."

"Any book of travel," said Meldon, ignoring the Major's last remark, "will

(Continued on page 74.)

Building and Furnishing the Farm Home

Planning for Efficiency at Reasonable Cost

By ETHEL M. CHAPMAN

Home-building is a subject that has interested men and women since the days when our ancestors abandoned the caves and the tree-tops for dwellings of mud and stone, but the development of plans for convenience and comfort has been slowest in the country where it is needed most. We are just beginning to realize that a good heating system, running water, bathroom, and comfortable every-day furniture in the farm home brings better returns than the bank interest on the capital invested. The Farmer's Magazine is always glad to answer questions on house-plans and furnishings, and in submitting these we suggest that you name, approximately, the amount of money you want to spend.—Editor.

The noblest craft in the world is home-building. The urbanite frequently appreciates this to the full, and forestalls in his new home all the grace and convenience and comfort his architectural tastes and his purse allow. But in the country where our home sees more of us, where whole families of children grow up and the building remains in the family ownership for two or three generations, where we entertain our friends, have our work, and pleasure, and rest, for a lifetime, we are more given to the idea that anything will do. Because the farm house is likely to be of long standing it should be well-built and durable; because there is more work to be done there it has a better claim to convenience than the town house; and since it is the constant centre of family life it needs all the grace and beauty and comfort that can be put into it.

This house is planned purposely for a farm home. The substantial appearance due to the square, compact layout, is relieved from severity and over-plainness by the dormer windows, the broad porch across the front, the chimney running up the outside, and the built-on pantry making a little jog in the side wall. The monotony and aggressiveness of long straight lines soon become hard to live with, and the value of a graceful exterior to your home is appreciated more every time you drive up the lane or look up from your ploughshare to catch a glimpse of it across the fields.

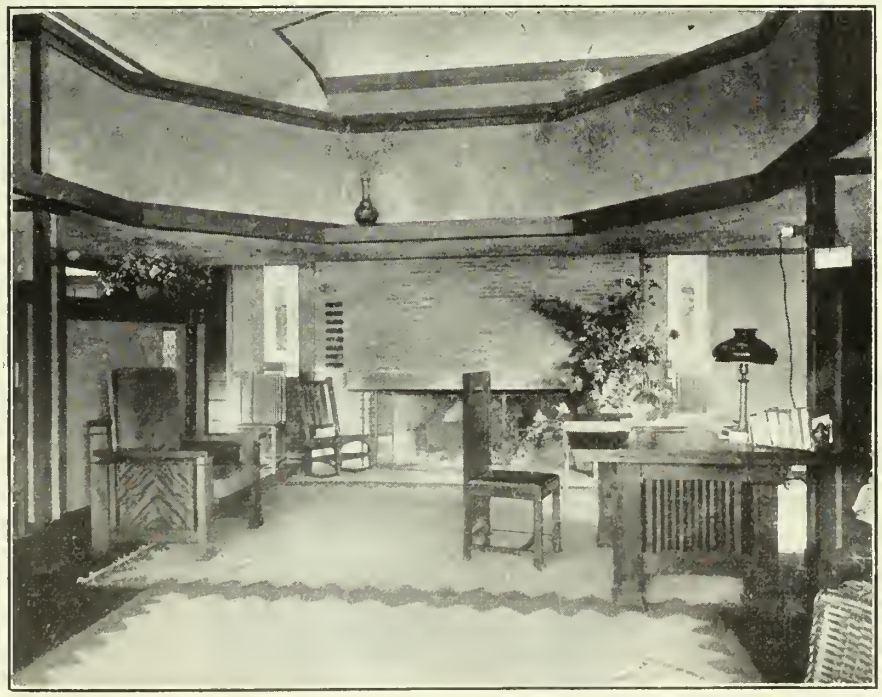
Considering the cost of keeping a frame house painted, it would be more economical in any district within easy shipping distance of a brick works to use a brick veneer or solid brick. A frame house like this, not over large and having a little of the bungalow effect has a delightfully snug and solid appearance, painted a dark brown with white trimmings and brick-red roof.

The first considerations in the layout of the interior are convenience and comfort. Beginning at the back, the porch is an important feature. In the summer it forms a shade for the kitchen and some of the kitchen work can often be taken out there in hot weather. The kitchen may be a little smaller than that in the average farm house, but this means less travelling for the worker, and having a pantry well fitted with cupboards and a work table, a large kitchen is unnecessary. The reason for having the cupboards in the pantry which is built to be most convenient to both kitchen and dining-room, is that I have never yet seen a farm home where the men didn't like to sit around the kitchen stove for a while after supper, and where you have hired help, as you are almost sure to have sometimes, it is more convenient to wash up in the pantry. The work table is broad enough to hold the molding board, and being near to the cupboard and the dumb-waiter, the baking can be done here more easily than in the kitchen. The coat closet between the kitchen and library is almost a necessity, if things are to be kept off the kitchen walls, and is equally convenient for anyone entering by the front door.

Unless the stair in a farm house goes up from a hall convenient to both the front part of the house and the working rooms, it is most desirable to have two, yet in a building of this size we do not want to spare room for two entire flights. This difficulty is overcome by having a back stairs from the kitchen meet the winding front stairs on the landing half way up.

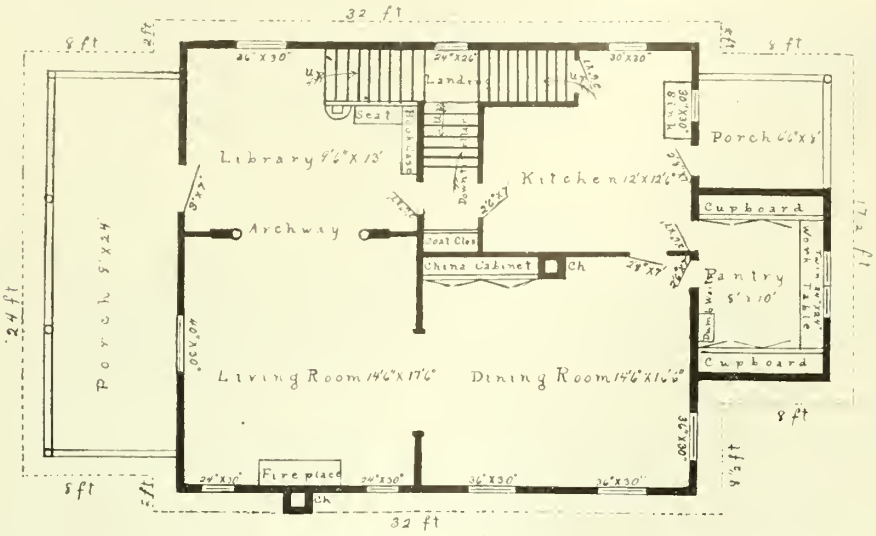
The dining room is well-placed for convenience with doors opening from kitchen, pantry and living room, the wide sliding doors in the latter case making it possible to throw the two rooms together when desired. This is better than an open archway as it should be possible to keep the dining room closed from the living room when not in use. A square room, like this, with straight walls, does not lend itself to decoration so well as a room with nooks and corners, but we can overcome the plainness in the dining-room by having a low plate-rail. The built-in china cabinet filling the space between the chimney and the corner costs very little if put in when the house is being built, and has a fine substantial roomy appearance more suited to the general style of the room than an elaborate piece of mahogany would be.

The rest of the ground floor is given to the living room and library, only partly separ-



A living room with oak panelling, a fireplace and mission furniture, has a delightfully substantial and cosy appearance.

ated by an archway. You may think it unnecessary to have a library in a farm house, but the room itself is not at all unnecessary and I had to call it something. Perhaps you have sometimes found it difficult to write or make up your books right in the bosom of the family, and this gives a secluded corner for a writing desk and a table where the children can take their books in the evening. The built-in book case and seat underneath for checker-boards and dozens of other like things that find their way into your home, must not be overlooked. The other idea in having this room is that anyone coming to the front door need not be ushered right into the family circle, although country hospitality attaches little importance to this; the people who come to our doors are usually our friends. The open stairway adds much to the appearance of this room, and having a fireplace on the opposite side of the living-room, the air is kept in motion, improving both ventilation and heating.

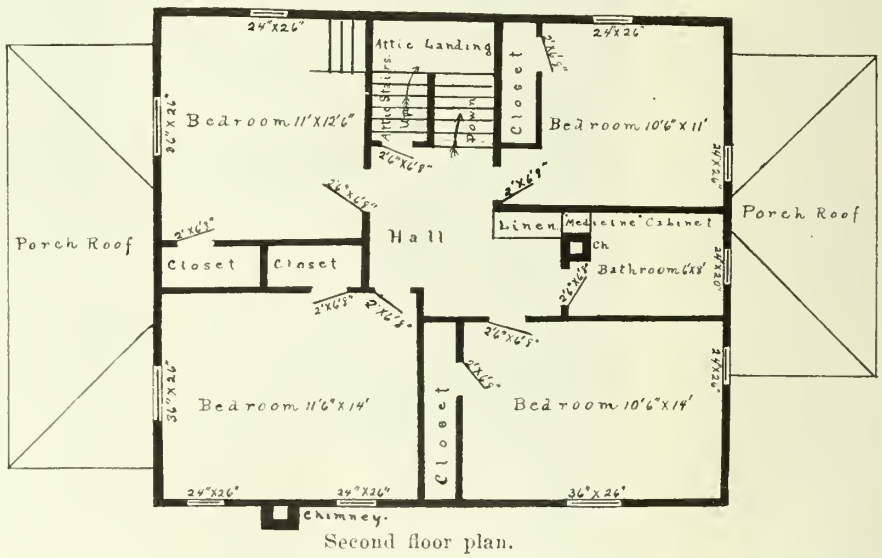


Ground floor plan.

The layout of the second floor is very simple. The bedrooms are well lighted for the bedroom needs sunshine and fresh air more than any other of the house. It is also important that each have its own clothes room. In the bathroom, the space between the chimney and the wall gives room for a little cupboard which for want of a better name we will call a medicine cabinet, while a good deep linen closet in the hall is almost a necessity, especially where there is no storeroom on the same floor. Every farm house should have a good-sized lumber room and an attic like we have here besides being roomy and easily kept clean, protects the bedrooms below from the sun on the roof in hot weather.

The decorating and furnishing of a house allows so much scope for originality that it would be useless to make any fast rules, the most interesting feature of the art is to have your house just a little different from any other. The importance of a sanitary arrangement for the farm home however, will stand emphasis because we are too ready to think that with an abundance of fresh air and sunlight, the country is germ-free, and in the second place, the country woman as a rule does not attach enough importance to saving work for herself.

In the kitchen or the bathroom, the steam soon fades and loosens an ordinary wall paper, so a finish of paint or saniflat, something that will wash, or a wash-paper is more satisfactory. The objection to the latter is that it turns yellow, and has to be scraped from the walls inch by inch. If a paint finish be used a very pretty effect may be had by making a stencilled border. Where a kitchen is not very well lighted, having the walls done in some light color, buff, yellow, light blue or green will make the most of every ray entering the room. If there are many windows it is just as important to use a soft dull shade to tone down the glare. Linoleum, preferably inlaid, as the pattern in this stands as long as the material holds together, is not only easier to clean than the bare floor but forms a more yielding surface, which no one appreciates more than the woman who is on her feet most of the day.



Second floor plan.

The kitchen furniture is very simple where you have a pantry well equipped with cupboards. A good range comes first, and besides this an oil stove for the summer is worth far more than it costs. Besides the necessary table and chairs the farm kitchen should have a lounge, not the upholstered affair that has served its day in the parlor and is beginning to show its "in'ards," but a solid home-made frame with a cot mattress and covered with pebbled oil-cloth or something else that harbors no dust and can be washed off.

Whatever color scheme is used in the dining-room try to have a rather dark decoration above the plate-rail. The china will not look its best without a contrasting background. If a plain paper is used for the walls with a lighter ceiling in a harmonizing shade, a frieze of some rich, dark pattern from the plate-rail to the ceiling gives a striking effect. The same scheme may be followed with burlap for the walls. Brown walls with buff ceiling and a freize of yellow marigolds on a dark brown ground, or yellow walls with cream ceiling and frieze of purple asters or numberless other combinations may be used according to the taste of the individual. A mission table chairs and buffet of oak to match the built-in cabinet will look better and last longer than the less solidly-built and highly polished dining-room suite. A dinner wagon, if used for nothing else than to carry the dishes to and from the table saves a great many steps.

In previous issues we have discussed various ways of furnishing and decorating a living room. A style which might well be employed in more of our country homes is the use of beams, panelling and heavy mouldings. A living room to fulfil its purpose must be durable and at the same time combine so much of beauty and comfort as to make it inviting for every member of the family and while this style of architecture may seem cumbersome and severe to some people, it must not be overlooked that it offers excellent possibilities for attractive furnishing. If you get solid comfortable essenitals in the shape of sanitary, durable walls, floors and furniture you can add as much softness and daintiness as

you like by having pretty curtains, pillows and hangings, but these should all be washable. We have learned the evils of carpets and plush upholstering, so a good heavy rug and leatherette furniture, if you do not want to invest in the more expensive leather, may be substituted. A living room with oak panelling, a fireplace, and mission furniture has a delightfully substantial and cosy appearance.

The first aim in decorating and furnishing a bedroom is restfulness; this means a good bed, quiet colors and pure air, which, however good the ventilation cannot be had if the room is filled with dust-collecting furnishings. The day of fancy wool dresser-mats and hair receivers is past, and bedroom carpets are so rapidly giving place to movable rugs and mattings that little need be said of these. Apart from considerations of comfort and sanitation, each person's bedroom should be made to suit the individual; if a boy wants his room red, it is poor judgment to fix it up with pale blue. The guest-room of course does not come under this rule but the greater danger here lies in making it so fine and cold that there is nothing of hospitality about it.

It is an endless subject, this home-furnishing and one on which volumes might be written, but it becomes a fine art only when the result meets the requirements of the family tastes and exchequer. It doesn't matter what the outsider thinks of it. There is, of course, the influence of a refined environment to be considered; but do you not know of some home where, according to your judgment, the walls and pictures and furniture seem fairly quarrelling with one another; or it may be so humble that the effort for beauty has been severely handicapped, yet it is perfect in the respect that every member of the family is proud to call it home, thrilling at the first glimpse of lamplight from its windows and preferring the shelter of its walls to the most popular public hang-out. This is the ideal.

Back to the Sugar Bush

How Some Farmers are Making a Success of the Maple Industry

By ALEX. MacPHERSON

According to Dominion statistics, during the past twenty-five years there has been a falling off in the maple sugar industry in Canada. With the growing demand for first-class maple products this is to be regretted, particularly since it is estimated that the industry now representing an annual valuation of almost $2,000,000 is carried on by about 55,000 growers. Every farm should have a maple grove for its own supply of this wholesome luxury, but in this article we see how some farmers are making it one of the most profitable of their farming operations.—Editor.

JUST NOW everything points to a revival of the maple syrup industry in Canada, not the haphazard practice of driving a few spiles into the maple trees in the lane, or along the edge of the wood-lot and setting out every culinary vessel in the house except the steamer and the collander to catch the sap, but an extensive, systematic business, with big sugar-bushes and up-to-date equipment. Trees of other varieties than the hard maple are gradually being culled from the groves set apart for this purpose, especially in Eastern Ontario and Quebec, where the average maple grove contains from fifty to a hundred tapped trees per acre.

There is some controversy with regard to the number of trees that will give the maximum yield of sap per acre. Possibly the ideal grove would contain a little over a hundred trees per acre, but as the sugar making quality of the sap depends on a large leaf area the farmer will often find it necessary to thin out some of the poorer trees to allow a greater crown development in the others. For sugar production a tree should have an ample root system to furnish an abundant supply of crude sap, a broad spreading top with big leaf surface to insure a good sugar quality, and a big long trunk for a storage tank. If the trees are to do their best, then, the soil must be kept cool and moist, and farm stock should not be allowed to run in the sugar bush year after year, tramping the surface roots and browsing the branches, although it is generally considered a good plan to let cattle browse the grove about one year in every five or six to keep down the underbrush which causes so much loss and difficulty in gathering the sap. If you have an old grove it is likely to contain a number of over-mature trees that have passed the time of yielding good flows, and unless these are replaced the grove is losing ground. About the simplest way to renew an old grove is to remove the old timber and exclude the farm stock, allowing the young seedlings to spring up everywhere. While these are still young, roadways for sap gathering should be made, and later the best saplings may be encouraged by lopping the tops off the poorer ones. If cattle are let into the grove when the preserved saplings are about ten feet high, the difficulty of getting rid of the younger brush will be solved.

The old sap yoke was more picturesque than labor-saving.

How They did it Fifty Years Ago

Some of us remember, and most of us are familiar with the story in our old school readers of the way they made maple syrup fifty years ago. A picturesque affair it was with the big iron kettle hung over the open fire and the hot sap emptied from one uncovered vessel to another as it reached a certain stage in the "boiling down" process. The leaves, sticks and ashes that happened to drop in meanwhile, were considered just a natural part of the proceedings and the tares and wheat were left together until the time of clarifying. Nor was it a matter of any concern that the process was a slow one. Fuel was cheap and the old-time sugar-maker did not recognize the fact that sap, like milk, is a very perishable product, an excellent medium for the development of fermentive organisms, and that not only is cleanliness important, but the more direct and speedy the transformation of the new sap to the finished product, the better. The modern sugar-maker keeps this in view in every detail in equipping his plant.

The ideal sugar house has walls of house-siding or cement, cement roof and shingled ceiling, with a lean-to for storing wood. Metal roofs are often used but are likely to drip while the boiling is going on. If the floor is not wholly of cement, there should at least be a pavement of cement or brick in front of the

A gathering tank discharging its load of sap at the sugar house.

furnace as a protection from fire. The house should be built on sloping ground so that the sap can be emptied through a pipe into the storage tank and from this into the evaporator. Where this is impossible it will save work to build an elevated bridge just back of the storage tank, where the load of sap may be hauled and emptied through a pipe from the gathering tank to the storage tank.

Perhaps the most important piece of equipment in the sugar house is the evaporator. A successful sugar-maker says, "We used to boil our sap in an iron kettle, used at other times of the year in making potash and soft soap. It must have been clean, but the syrup was always dark and strong-flavored. Then we got a sheet-iron pan, which was better, although it still required a lot of fuel and didn't turn out anything like the light, clean, delicate syrup we have since getting an evaporator." These pans with their corrugated bottoms partitioned off to give a zigzag course to the sap, and set on an arch which usually has a regular stove with large doors for firing, give rapid evaporation and are most economical of fuel. Being heavily tinned they are easily cleaned, and the syrup is always light and clear. In buying an evaporator it is not wise to get a small one while there is a possibility of ever wanting to increase the plant. An area of ten square feet of boiling surface for every one hundred trees tapped, is a pretty fair rule to follow in determining what size of evaporator to buy.

When the Sap Begins to Run

We always try to have the wood cut and piled in the sugar house before the snow comes in the fall, and make sure that we have enough spouts, buckets, etc., on hand before the run begins. We use only tin buckets for catching the flow, as the galvanized iron, while it will not rust, is likely to discolor the sap, and wooden buckets, if it were possible to get them nowadays are hard to keep clean and the sap often sours in them. We find it pays to paint the tin pails outside to prevent rusting. The spiles are of galvanized steel, round and tapering so as to hold a bucketful of sap when driven firmly into the tree. Being round they keep the air from the hole and guard against drying up, retaining sap to sour during a warm spell, or to freeze when the weather is cold. This year we are going to use covered pails almost entirely, as we lost so much sap during the storms last spring. I reckon on getting a pound of sugar from a pail of sap, and out of one hundred and ninety pailfuls gathered after a rain the yield of sugar was only eighty pounds instead of one hundred and ninety, as it should have been had the rain water been kept out by covers.

As sap deteriorates so rapidly after it comes from the tree, I find it advisable to commence gathering as soon as there is a quart or two in the buckets. Pails with broad bottoms are most convenient for this, and the gathering tank should be of heavy tin or galvanized iron, with an outlet near the bottom fitted with cotton hose for emptying into the storage tank, and circular in form, as the sap dashing about when the sleigh is hauled over rough ground, would soon rack a rectangular tank. The hose can be hooked to the top of the tank while gathering. We fasten a double cloth, and a wire strainer over the top of the tank and that is all the straining the sap gets. We strain the syrup once through three or four thicknesses of flannel.

Sugar-makers agree that the more rapid the evaporation, the clearer, lighter and more delicately flavored will be the syrup. In the days of the old potash kettle the liquid was so deep in the vessel that the boiling was a tedious process. Someone was generally expected to sit guard all night with a piece of pork fastened to a stick to prevent too much loss by "boiling over." The corrugated bottom of the modern evaporator exposing the sap to such an area of hot surface, and the sap never being allowed to cover the bottom to a depth of over half an inch above these corrugations, makes the evaporation very

(Continued on page 87.)

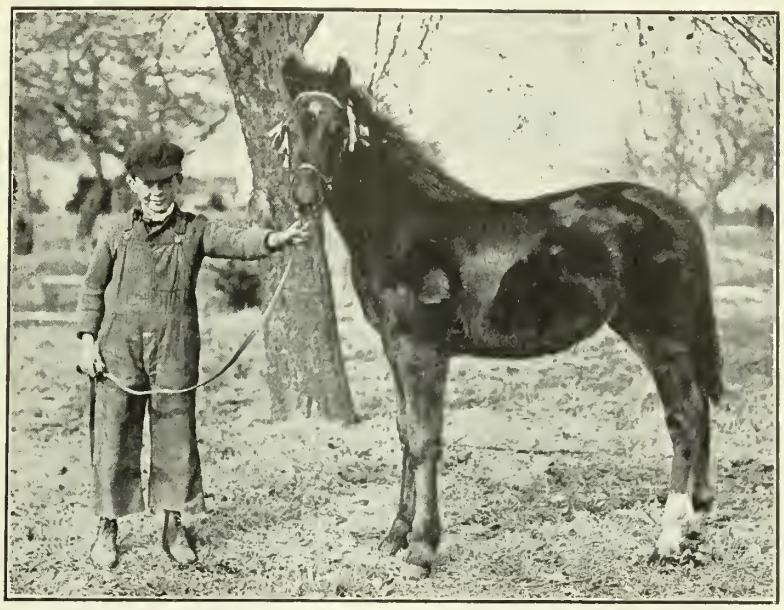
Metal gathering tanks are much preferred to wooden ones by the more advanced sugar makers.

Farm Outlook and Output

Feeders and Planters Must Have their Ears to the Ground to Make Money

By ELUID KESTER

Business Farming must prevail. The man who is going to make a success of his farm and his farming in this day of strenuous life is the man who applies business principles to his agriculture, and business principles include farm bookkeeping; inventories at the end of the farm year; a farm office and desk; printed stationery and a farm name; up-to-date farm literature; market forecasts and reports; and a personal acquaintanceship with world-wide conditions.



There is always money in a good colt.

Farming to-day is a business. It combines in it all the perplexities and problems of production as well as of salesmanship. It is a fact far more complicated in its work than many big manufacturing businesses. Many farmers are becoming comfortably well-off by paying attention to the details of their work, after the manner of the business undertaken in the city. It has been shown in Farmer's Magazine from time to time how men are doing this. The fact of a live stock farmer becoming a millionaire; of another reaping $5,000 returns from 100 acres; of others in Canada making big returns from intensely conducted small farms, or from big wheat ranches—these are no fables. They are facts, and facts are meaningful things for our advantage in duplicating results for ourselves.

Personal acquaintance with wide world conditions in the producing world is only possible by close attention to reports and market quotations. For example—John Jones in Kent County knows that the stock of beans has been depleted in the world's supplies. Higher prices, of course, warn them of this, and his judgment tells him that the oncoming usual crops will not likely meet the demand. He sows largely of beans, cultivates them and wins out. Another man has read the reports on grass seeds and clover and foresees a shortage in timothy seed, and instead of cutting his crop for hay, he saves his meadows and nets $5 a bushel on timothy seed.

But perhaps the shrewd eye of the salesman is best needed in the case of the feeder of live stock. The deviation of a few cents from expected returns often means big losses in the business. Perhaps in no part of the continent of America has this watching and forecasting of the live-stock market become so expert as among the feeders of the United States in the Middle West. Cattle, sheep and hogs are there fed in large numbers. They have the open feed lots, plenty of corn at hand, and markets close by for the finished product. The crops, the weather, the tariff and outside agricultural reports influence the market for these in a most vital manner. Too often live-stock feeders go in flocks, as has been instanced many times in Canada, where good prices for pork have caused a big expansion in the production, to be followed by a period of low prices. The feeder, farmer, breeder, or is the case of many Canadian farmers who are all three of these combined, assembles all the information obtainable, readily foresees such results and assuredly avoids them.

The new tariff in the United States has had considerable influence on prices in Canada as well as in other producing parts of the world. Over 1,000,000 bushels of corn have been imported into the United States from Argentina since the new tariff went into effect. The play of new factors such as this can be read on the sensitive grain exchanges. Only a few days ago we saw corn falling in Chicago out of sympathy with a similar drop in Buenos Ayres. But we cannot draw hasty conclusions,—this has been Argentina's big year and a slim year in the States. Nebraska alone can surpass the Argentina production of corn under ordinary circumstances.

The cattle trade in Canada has undergone a complete rejuvenation since the United States Tariff changes. Prices at once ascended and feeders everywhere were enabled to get out with a good margin. The country everywhere has been scoured for stockers and milch-cows. In many parts of the East extensive shipments across the line have taken place, while the appreciation in prices has been readily noted in the livestock auction sales throughout the country side.

Much has been commented in the daily and weekly press upon the situation. As a rule, the city man, be he worker, or capitalist, does not learn of the question of meat prices until his butcher bills compel attention and each alike, under the impulse of the moment, begins to work out a solution by working from the top downwards—a philosophy that leads them to such results, as the advocating a close season for the killing of females, and the feeding of cattle to the age of three or four years.

Our Inexhaustible Farms

The farmer knows what pays him and he is doing his best under the present conditions to make a living. When agriculture has become such a helpless charge on a parental government, we may look for all individual movements in the farm to be made by reference to the dial or chart of the agricultural department. The putting of an embargo on his production cannot stimulate it. Our farms are practically inexhaustible under proper tillage. The wider the markets, the greater the farmers' productions and the more he will make.

The beef situation in Canada looks to be on a sound basis. There is also a disposition among Western farmers, as well as Eastern farmers, to go in for greater production and larger feeding operations. The demand of consump-

(Continued on page 85.)

Flower Annuals for the Farm

Something about the Best Varieties and how to Care for Them

By W. HUNT

As soon as the days begin to lengthen and the seed catalogue is left in the mail box, we begin to have visions of the summer bloom that will brighten our lawns, climb over the porches and make the back yard look like a little Eden. The question of securing varieties that will be both beautiful and easily grown, as well as how to grow them, is a subject in which most of our readers will be interested, and in this article by W. Hunt of the O.A.C. staff, we know that we are giving you something reliable and practical.—Editor.

ALTHOUGH annual flowering plants are more uncertain as to results, and require more care than hardy perennial border plants, their bright and varied colors make them a very useful addition to perennials in the flower garden. Annuals can also be had in even a greater variety of color and form than is found in most collections of perennials and are possibly more useful for cut flower purposes. A great many annuals, such as Mignonette, Sweet Peas, and Stocks have very sweetly perfumed flowers, something that very few of the perennials outside of the Paeonies and Iris possess, some varieties of the two last named often having anything but a pleasing perfume to their flowers. Again, a well-grown and well-selected collection of annuals give a profusion of flowers from early in July until quite sharp frost in late fall, at a time when there are often only a few lonely-looking flowers, scattered here and there among the shabby, desolate-looking relics of the early summer flowering perennials. A well-grown collection of annuals also have a freshness about them, from early summer until fall, that few perennial borders have, except for a few weeks in the spring and early summer. No flower garden is complete without a selection of the best annuals.

Location for an Annual Border

Almost all annual flowering plants are sun-loving in their nature. Very few of them, except perhaps Pansies and Lobelias like shade, and these are not really annuals, though usually grown as such. Even these only require shade during the hottest part of the day. Care should be taken not to make the border close up to a brick or stone building facing the south, especially if it is a narrow border. The concentrated heat of the sun near to a building facing the south, makes it very difficult to germinate seeds, and also to keep the plants in a healthy growing condition later on. An east or west aspect in front of a building or fence is not so objectionable as a southern exposure is. An open position is, however, usually best for annuals.

Soil

A fairly well enriched, light loamy soil or a moderately heavy clay loam soil will suit them. Clay soils or very sandy or gravelly soils are suited for but few annuals. Clay soils may be made more suitable by digging in sand and leaf mould, as well as a good coating of half-rotted barnyard manure. If soil is of a sandy nature, dig in soil of a heavier nature with some barnyard manure added. The fertilizer mentioned should be dug in in the fall if possible, and the surface of the ground left rough and lumpy, or the soil may be thrown into small ridges if of a clayey nature. This ridging will help to make the soil much more friable for a seed bed in spring time. Use a potato fork for the digging, it is better than a spade. The fertilizer should be dug in rather deeply. In the proper preparation of the soil lies the main secret of success in raising annuals, more perhaps than in any feature of outdoor gardening.

Annual Chrysanthemums from seed.

Preparing the Soil

The soil should be forked over in the spring just before sowing the seed and the soil well pulverized when the ground is moist, not wet. Any fertilizer dug in now should be well decomposed barnyard manure. Rake the ground fine, and sow the seed when the surface soil is fairly dry.

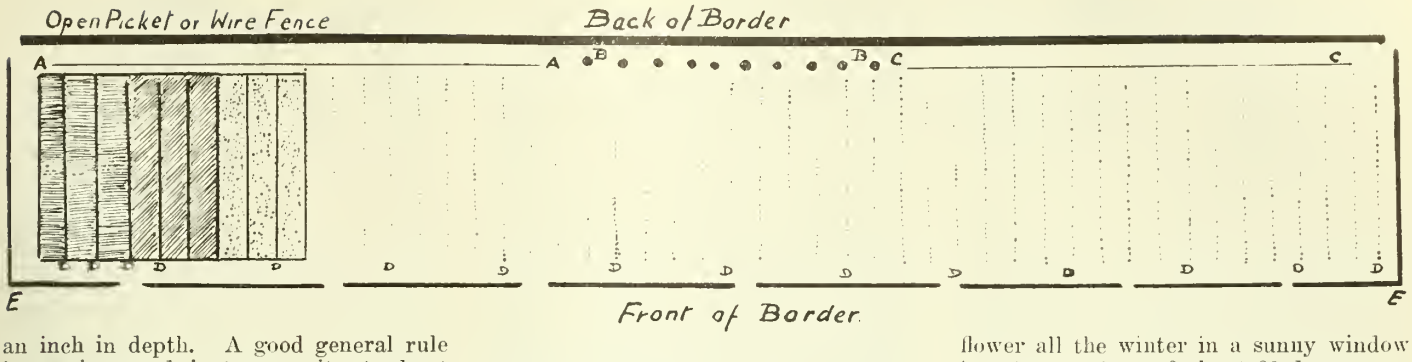
Sowing the Seed

Almost all of the annuals except Nasturtiums, Castor Oil Beans, Poppies, Balsams, Portulacca, Marigolds, Zinnia, and Morning Glory seed may be sown quite early in the spring, usually about the end of April. The kinds just named would be better not sown until about the second week in May, as the plants will not make any headway until quite warm weather comes, and possibly the young plants of these kinds may be frozen if sown too early. All of the other kinds such as Asters, Phlox Drummondii, Stocks, Scabiosa, Salpiglossis, Schizanthus, Dianthus, Nigella, Calendula, Zinnia, Mignonette, Candytuft, Sweet Alyssum and other kinds may be sown as early as the ground can be worked nicely.

The seed may be sown so that the plants will form small groups or clumps, or it may be sown in parallel rows three or four rows or more of each kind in a block. If sown in rows, the rows should be about ten or twelve inches apart. The plants, whether in groups or rows, should be thinned to about eight to ten inches apart when five or six leaves have developed. Phlox Drummondii, Sweet Alyssum, Candytuft and Portulacca may be thinned to only three or four inches apart. Dianthus, Ten-Week Stock, and seeds of about the same size as these should be sown in drills about half an inch in depth. Very fine seed, suc has Poppies and Portulacca, should be barely covered with soil. It is best to sow these last-named broadcast and rake the seed in carefully, or sow them in very shallow drills. If you have a very sandy or light piece of soil in a hot, sunny spot where nothing else will grow, sow some Portulacca seed, it will make a blaze of color in hot, sunny weather, where nothing else will grow successfully. Convolvulus, (Morning Glory), and Balsam seed should be sown nearly

California poppy. "Eschscholtzia Thorburni," bronzy crimson and yellow.

Diagram of Annual Border.



an inch in depth. A good general rule in sowing seed is to sow it at about three times the depth of the diameter of the seed. Sow seed when the soil is fairly dry, not when it iswetandsticky. Sow three or four seeds for each plant required, they can be thinned out later on to the proper distance.

The following diagram will give an idea of how to lay out an annual border on the "short row" or "plot" system. The border may be anywhere from 3 feet to 8 or 10 feet in width, and of any desired length. A list of the best annuals for a farm flower garden is also appended in the order in which they may be sown from left to right of the diagram.

Early Flowering Annuals

If early flowering results are wanted, it is best to start the seed in a hot-bed or window. Almost all annuals except Nasturtiums and Morning Glory may be started early about the end of March indoors, and transplanted out of doors later on. Nasturtiums and Morning-Glory do not transplant very well. A week or two may be gained by sowing early in this way. Sow the seed in rather light soil in shallow boxes, much in the same way as recommended for out-door sowing, except that the drills should be only about 1½ inches apart. The boxes should only be from 2 to 3 inches in depth. Some half-inch holes about 6 inches apart should be bored through the bottom of the boxes for drainage. Empty finnan haddie boxes will answer for this purpose very well, or the seed may be sown in soil in the hot bed. Give the seedling all the air possible to prevent a spindled growth. Stand the boxes out of doors every day as soon as weather permits, to harden the plants to out-door conditions before planting them out in the border. Shade them very hot sun. Plant them out in the border about the end of may in showery weather. They may require to be transplanted before being planted out in the border. If so, use shallow boxes as before and set the plants about two inches part in the soil. The seed of climbing plants, such as Morning Glory and Japanese Hop, is best sown where they are to grow and flower, as they do not transplant readily.

Petunias, Verbenas, Salvias, Antirrhinum (Snapdragon), Ageratum and Pentstemon are all perennials. They make splendid plants for the flower garden, especially the four first named. The seed should be sown indoors about the middle of March to secure early flowers, and treated the same as for early annuals. Unless sown early, these plants do not give flowering results until quite late in the summer. Castor Oil Beans are best started about the same time indoors. Petunias and Verbenas are especially useful as summer border plants. All of the plants mentioned should be planted about 12 inches apart in the border. Plant them out in the border about the end of May. The Salvia, Castor Oil Bean, and Ageratum should be planted out about two weeks later, as they do not like chilly cold weather. Castor Oil plants should be set nearly 3 feet apart in the border. Petunias and Verbenas will flower until very late, often until November, out of doors, if the weather is fine. If the stems of the Petunia plants are cut back in the fall before being frozen too hard, to within six or eight inches of the centre stem, and the plants dug up and potted in small pots in good soil, they will flower all the winter in a sunny window in a temperature of about 60 degrees.

A block of Sutton's "Brilliant Rose" Petunia, photograph taken about four months after the seed was sown. Sweet peas at the back.

Cobea Scandens

This is a tender perennial climber that will grow and give splendid results from seed, if the seed is sown early, about the end of March, indoors. Sow the seed in rather light sandy soil in which nearly one-fourth part of black soil from the bush has been mixed. If you have small flower pots, sow two or three seeds in each pot. Place the seeds on edge, not flat, and cover them with barely half an inch of soil. They may also be sown in a shallow box and transplanted. Put them in a very warm window or in a hot bed to start. Grow them indoors until early in June. They may be stood out of doors in very warm weather about this time in partial shade. Do not plant them out of doors until the weather and the ground have become quite warm, about the middle of June. It is better to keep them in the pots out of doors than to plant them out too early. Plant them in a not too hot and sunny spot in light rich soil, into which has been dug a good lot of leaf mould, (black soil from the bush) and well-rotted barnyard manure. Given a little water occasionally, they will make a thick, dense growth of climbing shoots twenty to twenty-five feet in height, which in July and August will be covered with beautiful cup and saucer trumpet-shaped flowers of both purple and white colors that make them very attractive and showy. They require a good amount of wire trellis to grow on. They are very suitable for a verandah trellis or for growing on a wire trellis fence, and grow very quickly if given proper treatment.

This is one of the best of all annuals to grow, and as they require different treatment in many ways to most annuals, I have mentioned them separately.

Sweet Peas also like an open, sunny position. Close up to a building or close board fence facing the south is not agood place for them. An east or west aspect close to a fence or building is not so objectionable. Near to an open fence or trellis will suit them very well.

A deeply cultivated, well-drained, rich, loamy soil is best for them. If the soil

is poor, or sandy, or gravelly, dig a trench about twelve inches deep and ten inches wide. Place three or four inches in depth at the bottom of well rotted barnyard manure. Dig in and mix with this some good, rich loamy soil, then fill the trench up with good rich garden soil. Avoid sowing two years in succession in the same soil. If sown in the same place, use at least about half new soil for them to grow in. The trench is best dug and prepared in the fall.

Sow the seed as early in the spring as the ground can be worked. The seed may be soaked for eight or ten hours in water before sowing to hasten germination. Make a drill about two inches deep. Sow the seeds about an inch apart. Cover with about one and a half inches of soil. Firm the soil down a little with the back of a spade, and thin the plants when about six inches in height to three inches apart.

A piece of wire netting about 5 feet in height stretched on strong stakes will make a good support for them. This should be put up as soon as the peas are sown. Clean brushwood of about the same height to support them may also be used.

The surface soil on each side of the row should be kept well stirred with a hoe. A rake is a dangerous implement to use very near to sweet peas.

In very hot, dry weather they will require watering. Give them a thorough soaking when watering them. The best plan is to draw a shallow drill about six inches from the row on both sides. Into this pour the water until the ground is well soaked. Light surface waterings are of no use. Once a week in the hottest, driest weather will be sufficient if watered in the way stated.

The cut worm is a dark brown or greenish grub that eats the stem near the surface of the ground, when the plant is a few inches or more in height, causing the plant to wilt and die. The cut worm can usually be found near to where it has been working. By stirring the surface soil very lightly, it can generally be found and destroyed, or they may be found after dark with the aid of a lantern, as they are nocturnal feeders. Sixty parts of shorts and one part of Paris Green mixed well together, dry, and then made into a thick paste with very sweet sugar water, is a good remedy for cut worms. Roll the paste into small pellets and place them near where the plants are being eaten. The cut worm is very fond of this sweet paste. Put the pellets down late in the evening, and take them up in the morning, to prevent chicken or children from eating them.

Green Aphis (greenfly) and Red Spider are the two worst insect pests. For the last named, spray the foliage thoroughly, especially on the under side, with a fine spray of water or soapy water, then dust the plants when nearly dry with finely powdered flour of sulphur. Do this every few days in hot, dry weather if the insects are very numerous. For Green Aphis, spray the plants with a strong solution of tobacco water. A solution made from Sulpho-Tobacco soap sold at seed stores is a good remedy for all insect pests.

Keep the bloom cut every second day as soon as they are in flower; this will prevent seeds forming. If seed is allowed to form the bloom will be small, and the flowering season will not last long. Cut the bloom early in the morning and keep in a cool place.

Sweet peas grown on brush.

If I had to choose only one flower to grow in the summer, it would be the Sweet Pea. For profuse and continuous flowering, beauty of form and delicious perfume, to say nothing of the great variety of colors and shades to be had, there is no summer flower to equal them, especially for the farm garden. The Spencer type of Sweet Peas is the most showy. Their large blossoms and wavy, frilled petals make them far more attractive and pleasing than the varieties of the grandiflora type. The last-named type is, however, very useful, and is possibly hardier and more enduring than many of the new Spencer type of Sweet Peas, and the seed is not as expensive as a rule. A row of well-grown Sweet Peas will be a constant source of pleasure during the greater part of the summer in the farm flower garden.

Predict Eruption of Vesuvius

Predicting that a great reawakening of Vesuvius is at hand, several Italian scientists emerged from an eight-hour stay within the crater of the famous volcano in September last, where they had been studying new volcanic activity. In the midst of asphyxiating gases, threatened by explosions, standing where a misstep might plunge them into a lake of fire, these scientists made observations which convinced them a new outbreak of subterranean forces might be looked for in the not far distant future.

A PIG

By WALTER G. DOYLE

I always like a pig.
His appetite is big,
But he isn't like a chicken with its dig, dig, dig.
And he isn't like some men
Who are happy only when
They have grabbed the choicest morsel in the other fellow's pen.

A pig's not over-neat,
And his food's not always sweet;
And his highest aspiration is to eat, eat, eat.
He's the synonym for greed,
But, unlike the human breed,
He doesn't keep on piling up a lot he doesn't need.

Now, a hen will scratch around
Over forty leagues of ground,
And holler, "Come and look at what I've found, found, found."
And a man is much the same
With his thirst for empty fame,
But a pig just fills his stomach, caring naught for praise or blame.

Making an imposing front
Is the human's favorite stunt,
While a pig dismisses pretense with a grunt, grunt, grunt.
No, his figure isn't trig;
His mentality's not big;
And he's apt to be untidy—still, I always like a pig.

—Lippincott's.

The Way to a Man's Heart

Partly Via the Old Stomach Route

By GENEVIEVE

One of the greatest movements of the age is the new dignity universally accorded to the everyday tasks of housekeeping and home-making. It is not only the university woman, but the busy, practical wives and mothers, who are seeking for more knowledge of those things that make for the physical and ethical welfare of their households. This article is written with a view to giving a general outline of the properties and values of the common foods, a subject on which we receive so many inquiries that we feel it will interest most of our readers.—Editor.

THE time-honored stomach route, important as it is, is not the only way to a man's heart. When our grandmothers spoke of it they generally meant that a man considered skilful catering the most valuable asset in a wife, but actual events have proved this idea to be a fallacy, so we will leave the man's viewpoint out of the question entirely. While these wise dames of older days were wonders as kitchen artists, the twentieth century woman sees more than mere mechanical skill in the business of feeding her household. It has not only a physical significance but an ethical value as well. Good food, well served and palatable, makes steady nerves and good tempers, and nothing invites the blues more cordially than indigestion. These lines from a housewives' hymn express most directly the serious optimistic attitude that the work deserves:

"The hum of dear things cooking on the range
Fills me with rapture, Father, is it strange
Since these, Thy products, are of grain and food,
And Thou Thyself hast called them very good?
And is it wrong, O God—my surging pride
When the rejoicing oven door swings wide
On russet bakings I have made to feed
My hungry brood? Thou knowest, Lord, their need.
Thou knowest how they lean to me for life,
Even the strong, brave man who calls me wife,
The father of my flock—must look to me
For blood and sinew, and the strength to be."

If we are to plan intelligently for this, we must know something of the composition of the common foods, and of their purposes and behavior in the human system. We read a lot that sounds stilted about proteids and carbo-hydrates, but so far as we are concerned, their functions are very simple. Proteid is the only food principle that will build body tissue or repair what has been worn out, so growing muscular work require foods comparatively rich in this material. Carbo - hydrates (starch and sugar) and fats will not build tissue. They serve as fuel to supply bodily heat and energy but because it cannot be stored in the body, a purely proteid diet would overwork the excretory system. The minerals and mineral salts and acids contained in the common foods enter into the composition of bone and blood and other body tissues and act as regulators, while a liberal supply of water is necessary, mainly for the purpose of carrying poisons from the body.

Since the high cost of living became a popular topic no household subject has received more attention than the meat bill. Scientists (?) have told us various ways of getting along without it, or have shown how a few pounds of meat, more than half bone and gristle with a few herbs and seasoning and a handful of barley can furnish food for a family for several days. However skilful a cook may be, she cannot create a particle of food which is not in the material to begin with, and meat while it is among the best tissue-builders, contains only about eighteen per cent. of proteid. A good authority gives seven ounces of meat as the amount required daily by the average man doing muscular work. The objection to a very generous use of meat is that being a very quick fuel it is rapidly converted into energy, and is therefore too stimulating for persons not taking strenuous exercise. Meat substitutes, like beans, nuts, and fish supply the proteid necessary without the stimulating effect, and may also be less expensive; but it is a poor farm where the expense of the best produce for home use has to be considered. With plenty of exercise in the open air, there is more danger of underfeeding than of inviting gout.

We might introduce vegetables into the diet more freely than is commonly done in farm homes. Most vegetables do not contain a great deal of nutriment, but are especially valuable as blood purifiers and regulators, on account of their mineral salts and acids, particularly where the part used is the leaf of the plant, like cabbage, spinach, Brussels sprouts, greens, lettuce, celery, cress, etc. The root being the storehouse of carbohydrate, potatoes, beets, salsify, parsnips and carrots are valuable for the starch and sugar they contain. The other desirable feature of vegetables as a food is the part they play in eliminating waste from the digestive system. In all vegetables there is a greater or less bulk of indigestible cellulose or fibrous material. If the walls of the intestines are to contract, they must have something to contract upon, and this is furnished most naturally in a liberal supply of vegetables in the diet, remembering always, that they cannot be expected to supply all the food material necessary. The Irish could never have reared a super-race on potatoes without butter-milk and pork and beans.

Fruit, especially raw and freshly stewed, is important not only for its bulk of cellulose, but its mineral salts and acids are blood-purifiers to which the system takes more kindly than to those coming from a medicine bottle. The fresh fruits cannot claim much in the way of food material, other than from five to fifteen per cent. of sugar, because they are so largely made up of water — a valuable element, too, by the way; but the dried fruits, like dates, figs and raisins may contain as much as seventy-five per cent. of carbo-hydrate with four per cent. of proteid. This does not concern the country woman so much, because she has an abundance of home-grown products to supply these, only knowing their medicinal properties, she needn't be afraid of Johnny making himself sick by secret visits to the raisin jar. The banana, although rich enough in carbo-hydrate to make, when dried and

powdered, a flour nearly equal to wheat flour, is so difficult of digestion that it might well be tabooed.

The cereals are not in the same class with other vegetable foods. Being the seeds of grain plants, they contain all the nourishment necessary for the little young new plant until it is able to take food from the soil for itself. This explains why oats, wheat, corn, barley, etc., have from ten to twelve per cent. proteid and from sixty-five to seventy-five per cent. starch and sugar with from two to five per cent. of fat. It is also supposed to explain why the old Scotch race with oatmeal for their staple food, developed such well-grown, strong frames. The mineral matter, mostly lime, in cereals, furnishes excellent bone-building material for growing children, and they should be taught to like porridge, not to take it because they have to. Keeping several varieties on hand and using a different kind each morning of the week will help to keep them from tiring of it; while garnishing with fruit, or adding sliced dates or raisins during the cooking will often tempt a delicate appetite. Rice differs from the cereals already mentioned in that it contains only about six per cent. of proteid but nearly eighty per cent. of starch, and owing to the low fat content the starch is very easily digested.

While milk is a perfect food for young animals, and in many cases the only food for invalids, it is too bulky to be used alone for the adult requiring the normal amount of fuel and building material. An average quality of milk contains about eighty-seven per cent. of water, four per cent. each of fat, proteid, and sugar, and one per cent. mineral matter. On the farm where fresh, pure milk is always obtainable the best way to use it is in combination with starchy foods in puddings, or with vegetables, or as a beverage between meals. Few people appreciate the value of buttermilk, the lactic acid bacteria actually waging war with germs in the digestive tract. Cream is sometimes recommended in cases of a wasting disease, like tuberculosis, but while it is an easily digested fat, being in a finely divided emulsion, it contains almost no proteid and cannot be expected to repair tissue. Skim-milk would be better, taken of course, with eggs, lean meat and other proteid foods. Cream serves its best purpose for fuel and fattening.

If milk, containing the natural quantity of water is too bulky to be a balanced food for the healthy adult, this objection is overcome when the water is presed out in the process of cheese-making. Cheese is about the most concentrated of our common foods, being approximately one-third proteid, one-third fat, and one-third water. The milk sugar is lost in the whey. Being so concentrated it is rather difficult of digestion, but this is overcome by grating and combining with light or starchy foods like macaroni, bread crumbs, or beaten egg white, the materials commonly used in cheese dishes. It might well be used more as a food instead of a condiment, especially in the working-man's dinner pail.

A great deal more might be said about the nutritive properties of the comomn every-day foods and the combinations that make balanced rations. Whole libraries are filled with it in our home economies; schools, Government bulletins are spreading it, and through the Women's Institute almost every farmer's wife in the Dominion is studying it for herself. Just because the subject is receiving so much attention, I would like to remind you that the stomach route isn't the only way to a man's heart—that is, it isn't the only means of bringing out the best in the people we live with. Good housekeeping is a fine art, but when put before everything else it has ruined more homes than it has blessed.

Late in the afternoon at a country fair when everyone was hurrying home, I passed an Italian fruit stand, just as the hurdy-gurdy cleared its throat, gave a few jolted chords and began grinding out "Darling I Am Growing Old," I don't know whether it is the haunting air, or the memory of the words, or both, that makes everyone want to forget everything and stand right in their tracks until the crank stops; but anyway I did, and another woman did. Her husband was with her, but he got some paces farther before he noticed that she wasn't keeping up. Still she stood.

"Darling, I am growing old," she half hummed with the organ, looking across at him a bit reminiscently, and decidedly sheepishly.

"Yes," he agreed (as much as to say, "You look it")—"and the cows 'll think you're losin' your memory, too."

That was enough. Guiltily she hurried after him, and I found myself wonderous whether they had ever, twenty or thirty years ago, loitered around a hand organ or a picture show; and if it was possible that part of the change was due to the fact that she, also, took the business of work and money-making too seriously; and what (and this seemed worst of all) what views of things her boys were growing up with.

There are only three things worth giving a place in life:—labor and laughter and love. Let labor crowd the others out and you might better have starved your people, a little bit, physically. Some time, if you are interested, we will consider other ways to a man's heart.

English Railway Supplies Playthings

Playthings are supplied free by the London and Northwestern Railway, England, to all children who are traveling first-class and have a long journey before them. These playthings consist of miniature locomotives, cars, and other railroad equipment, which are delivered to the children without the making of any record, but with the understanding that they are to be left in the car at the end of the journey.

What One Young Canadian Thinks of the School Fair

We have been publishing various writers' views on the new school agriculture. Have you ever wondered what the children themselves thought of it?—Editor.

Newtonville, Ont.,
Nov. 25, 1913.

Dear Genevieve:—

As I have not corresponded with you, I now write a short essay on our "School Fair."

In the spring the women of the Newtonville Institute sent to the Department of Agriculture, Ottawa, for seeds, such as onions, potatoes, corn, nasturtium, sweet peas and geranium slips.

Then they met at the school on Arbor Day, and distributed the seeds among the scholars to be taken to their homes to be planted and taken care of during the summer. The boys were to make a picture frame, a clock-shelf, and a bracket, while the girls were to hem a handkerchief, make an apron and do a sample of darning. Everyone was to have a collection of insects. We all worked very faithfully during the summer holidays to get our exhibits ready and make our fair a success.

Then the Institute women gathered together and appointed the fair to be on Friday, September 19, 1913. The day before the fair we decorated the school with autumn leaves and berries. Our mounted weeds were hung on the wall according to the classes, also pencil drawings and writing. The next morning we brought our exhibits, and arranged them on tables at the back and front of the school-room.

At 2 o'clock the judges came. We went out to play. After the judging was over we were called in for the programme which consisted of several short, but interesting addresses from several of the men. Then each scholar was awarded his or her prize which consisted of mouth organs, handkerchiefs, printing outfits, books, etc. When all was over, candies were served by the teacher. So the fair came to a close by singing God Save the King.

This is the first fair that occurred in our Public School, and I hope it will be an annual one.

Closing, I hope my letter will be a success in your paper, I remain,

Your new friend,
Olive Stapleton.

After such a good beginning I have no doubt your fair will become an annual occurrence. We will be glad to hear what they are doing in other schools.

"Genevieve."

Worry and fret are fatal to the integrity of nerve and brain. Fear can sting like a scorpion and torment like a scourge.

—Dr. Marden.

Preserving Pork for Summer

Sugar-cured Hams and Bacon Need not be a Store Delicacy

By WINNIFRED MARCHAND

Curing and preserving pork for summer use will be an important industry on most Canadian farms this month. Beef rings and local dealers may supply fresh meat during warm weather, but the home-cured pork is almost a necessary staple, and may have the delicious flavor and general fine quality that makes the store hams and bacon a popular relish. We have here some practical suggestions which may be timely for many of our readers.—**Editor.**

WHILE beef-rings have simplified the meat problems for the farmer's family in many localities, there is still a popular demand for home-cured pork. We are beginning to realize that the sugar-cured hams and bacon considered almost a delicacy by townspeople, may be relished just as much at home, and can be prepared so as to be not at all inferior to the article selling in stores for twenty or twenty-five cents a pound.

Pork, unlike beef and mutton, should be cut as soon as it is cooled through, and many butchers prefer to split the carcass as soon as it is dressed, to hasten cooling. The cuts shown in the diagram are most commonly followed, removing the head about an inch back of the ears, taking out the shoulders between the fourth and fifth ribs and cutting off the hams about two inches in front of the pelvic bones. The bits cut off in trimming the hams to a smooth rounded shape may be used in the sausage meat or if very fat, tried out for dripping with other waste pieces of fat. The feet may be removed at the hock joints, but sawing them off a couple of inches above is better as the hams will then pack much closer in the barrel. The leaf must be pealed out if it has not been done when the animal was dressed, and the tenderloin and spare rib can then be taken out. If the quality of the bacon is to be the best it must be cut close to the ribs. The side may be cut lengthwise into three evenly-sized strips, or if it is to be cured and smoked, into two pieces, the upper one-third, called the back strip, for salt pork or lard, and the lower two-thirds for bacon. The ribs and neck bones are generally taken from the shoulder and the bloody spots and neck meat trimmed down to the shoulder blade, the foot being removed above the knee-joint.

Being so easily preserved without deterioration in quality, pork is a good staple for the country larder. It does not contain so much building material as beef, and for this reason as well as for variety should be supplemented by fresh meat. It is a fine fuel food however and good curing overcomes to a great extent the difficulty of digesting due to the large proportion of fat. When we speak of this it must not be overlooked that bacon does not come under this objection; on account of the granular nature of bacon fat it is one of the most readily digested of flesh foods. The hams, shoulders and bacon strip may be cured and smoked, the loin cut into chops and roasts, or sliced, partially "fried," and sealed in jars for summer use, and all lean trimmings made into sausage, and fat trimmings into lard. The feet may be pickled and the head boiled for head cheese.

Preservatives and Curing

The only preservatives necessary for perfect curing and the finest quality of cured meats are salt and sugar or molasses. Salt is astringest and if used alone makes the meat hard; sugar or molasses used with it keeps the muscle fibre soft as well as improves the flavor. Saltpetre preserves the natural color of the meat, and if used in small quantities may be almost harmless; it must be remembered, though, that it is a poison. Spices may be used for flavor. They also have an antiseptic effect while baking soda may be used in small quantities to sweeten the brine if there seems to be danger of it spoiling in warm weather. In this case it would be better to boil the brine or make a fresh supply.

These cuts give pieces well shaped for curing and packing.

Although the plain salt pork is not used so much as the sugar-cured, many farmers prefer to preserve the sides at least in this way. A brine of ten pounds of salt and two ounces of saltpetre dissolved in four gallons of boiling water makes good pickle for one hundred pounds of pork. The meat is kept in this until it is used. A clean hardwood barrel makes a suitable vessel for this, but a large stone jar is the ideal, as it can be so thoroughly scalded out and retain no odors.

In sugar-curing hams and bacon rub each piece with salt and let it drain over night, then pack in a barrel, putting the hams and shoulders in the bottom and filling in with bacon strips. For each one hundred pounds of meat, weigh out eight pounds of salt, two pounds of brown sugar and two ounces of saltpetre. Dissolve in four gallons of water, heat to boiling, cool and pour over the meat. Bacon strips should remain in this brine from four to six weeks; hams and shoulders six to eight weeks before smoking.

While dry-curing requires more work than pickling, it is generally thought to preserve the flavor better. A mixture of five pounds of salt, two pounds of sugar and two ounces of saltpetre will do for one hundred pounds of meat. Andrew Boss, of the University of Minnesota, says: "Rub the meat once every three days with a third of the mixture." This would mean that the meat gets only three "rubbings" so possibly the farmer who treats his every day for a fortnight is doing a lot of unnecessary work. After the last rubbing the meat should lie in the barrel for a week or ten days, when it will be cured and ready to smoke. It should be cured in a cool moist place in order that the preservatives may penetrate well and evenly.

After meat is smoked there is still the difficulty of protecting it from insects. A coat of ground pepper helps a great deal, but if it is to be kept for any length of time, the pieces should be wrapped in paper and put in cotton bags which are then washed outside with a mixture of whitewash and glue.

Trying-out Lard

After the killing this is a job that the housewife wants to get through with as soon as possible. The fat should be divided into separate lots according to the quality of lard it makes. The leaf fat, which makes the best lard should be rendered out first and kept for pastry. The back strip of the side and trimmings from the ham, shoulder and neck also make good lard, and the fat taken from about the intestines should not be mixed with these.

When preparing the fat for trying, cut it up into pieces about an inch square so that they will all be tried out in about the same time. Any lean pieces should be removed as they are likely to stick and scorch. Fill a kettle about three-fourths full and put in a quart of water or if convenient a quart of hot lard to prevent the fat from burning before the heat brings out the grease. (Of course any one knows the danger of letting water drop into the fat after it is hot.) When done, cool slightly and strain through a muslin cloth. Stirring the lard occasionally while cooling, tends to make it white and smooth or adding a little baking soda would have the same effect.

As the pork usually used for sausage comes from the shoulder, neck and trimmings it is likely to be too fat unless part of the fat is removed and used for lard. There should be at least three

times as much lean meat as fat. The seasoning will vary, of course, to suit the individual taste but a very good combination consists of twenty pounds pork, eight ounces salt, two ounces pepper, one ounce sage. After the meat is put through the chopper it may be spread out and the seasonings sprinkled over, then put through the chopper again. This gives a more even mixing than working with the hands. Sausage meat will keep well in a jar with a thin coat of lard over the top, but if you want to case it it hardly pays to bother cleaning casings at home. Strong, uniform casings cost very little, or long muslin bags two or three inches in diameter may be used. If the meat is to be kept in these for some time they should be rubbed over the outside with melted lard.

Many people prefer sausage made of a mixture of pork and beef. In this case a good proportion to use would be two pounds lean pork, one pound fat pork and one pound lean beef, seasoning the same as pork sausage.

Any tenderloin that is not used for roasts may be "fried" and put away in jars with the dripping poured over it. The fat congealing over the top makes a seal under which the meat keeps well. When this is wanted for use it needs only to be heated in the oven and is just like freshly cooked meat. Some housekeepers prefer to keep part of the cured ham for summer use in this way.

We are all familiar with the process of making head cheese, the importance of soaking the head over night and getting rid of the gristle and fat before pressing the cooked meat. A few beef bones boiled with the head meat gives a more jelly-like consistency to the liquor.

Pickled pigs' feet:—Soak the pigs' feet for twelve hours in cold water. Scrape them clean and remove the toes. Boil until soft, four or five hours will usually be required. Salt them when partially done. Pack in a stone jar and cover with hot spiced vinegar. They are served cold or split, dipped in beaten egg and bread crumbs and fried.

Acetylene Lighting for the Country Home

How to Install and Operate a Plant of Your Own

By J. R. JENKINS

NOWADAYS, to want a thing is to have it. In this wonderful century of inspiration and progress, no sooner has a need been felt than it is supplied by the genius of some inventive brain. So now, if the country dweller uses oil lamps and candles to light his house, he does so from choice, for there are to be had at reasonable cost four different modern systems of country-house lighting, through the installation of which every man owns his own lighting plant, is independent of city or town service, and, in addition, has power with which to operate any farm appliance from a threshing-machine to a brooder, and supply any household need, from cooking and water-heating to the last word in household appliances. That part of the service gained by the installation of an individual lighting plant is, however, another story, as this article is connected only with lighting; but it is important to know that the one plant will supply so many needs.

In mentioning and describing these various methods of country-house lighting, no attempt will be made to recommend any one system over another; for all are good, all have been scientifically tested for safety and efficiency, and each householder must be his own judge of which suits him best, after he has studied them with regard to cost and adaptability to his individual requirements. These systems, too, are to be considered particularly in relation to districts remote from community gas or electric service, for naturally, when these are available, there is much less trouble and responsibility connected with the lighting question.

Even though your home be isolated and out of reach of an electric power system or public gas supply, it is a simple affair to install a lighting plant of your own. This comprehensive account of the principles and rules to follow in putting in and running an acetylene lighting system clears up the uncertainty which many people associate with the steady white natural light.—Editor.

There are three excellent methods of gas-making—gasoline vapor gas, acetylene gas, and a high-pressure gas, known to many of its users as bottled gas, which comes ready for use in steel cylinders, similar to those used for carbonated water or for oxygen. There is also the individual electric-light plant, which has now been made commercially possible for household use by the perfection of the small gasoline engine. For any of the gas systems, the house is piped exactly as it would be for attachment to the regular city mains; only it is specified in some of the systems that the piping shall be a little larger, while in others it is necessary to have the piping a trifle smaller than that used for city gas, but the principle is the same. The fixtures, too, are the same as those used for city gas, equipped with mantles, and differ only in certain mechanical attachments.

Acetylene gas is obtained from calcium carbide, a substance somewhat resembling granite, running in various sizes, according to the use to which it is put, from egg-coal size to pea-coal size. Its component parts are lime and carbon. When calcium carbide is combined with water, acetylene gas results, so that this gas is formed by a very simple chemical process. But, though simple in principle, there are different ways of producing it—each possible and perfectly practical if the rules and directions of the manufacturers of the apparatus are strictly complied with. The methods differ also, I believe, in degrees of safety.

In one method, the water comes up through the carbide and forms gas, which then displaces the water and flows through the service pipes to the burners.

In another, the water is poured onto the carbide to form the gas.

The third is known as the carbide feed system, where the lumps of carbide are automatically fed into the water chamber where the gas is formed.

There is, of course, always a suggestion of danger where a combustible element is present, and in the interest of absolute safety it is considered better to install the generator outside the house in a well-ventilated fireproof building, located at a stated distance from the dwelling. So many excellent safety devices have, however, been perfected in recent years for application to acetylene gas-making that very little anxiety need be felt in its use. It must only be remembered that no gas-making machine, whether acetylene or vapor gas, is "foolproof," and, even if they are "so simple that a child can operate them," the duty of attending to the machines should be delegated to a person of sufficient years and intelligence to understand the possible results of carelessness. Calcium carbide must always be kept dry, and the apparatus should never be cleaned or recharged by artificial light, or in the presence of flame of any kind—which is also true of other gas-making systems.

The Test of Danforth

A Live Story in Which Love at First Sight Finds a Means to an End

By BERTRAM COSTAIN

Romance can be found even in the strenuous activities. In this instance it is discovered in the preference of the headstrong daughter of a multi-millionaire for a young man of unknown antecedents and the subsequent steps taken by her father to test the merit and honesty of the stranger. The story of the test of Danforth carries the reader into the realm of Wall Street intrigue where stranger things than are found in fiction are daily occurrences.—Editor.

MISS MOLLY MARVEL, only child of the wealthiest man in New York, gave a sudden cry as she half rose from her seat in the tonneau, steadying herself by grasping her father's arm.

"There he is, at last!" she said.

"Who?" demanded her father, absently.

"The man I am going to marry," said the girl, her resolute brown eyes fixed intently on some one in the crowd which poured past the slowly moving car.

A father who had survived twenty-one years of submission to the caprices of an imperious daughter could hardly be expected to show surprise at anything. Cyrus Marvel, like iron in his dealings with men, was mere putty in the hands of his winsomely pretty and absolutely unmanageable daughter. She had squandered several substantial fortunes, organized a party of friends for a rusticating trip disguised as gypsies, played in a polo match against a team of army officers, spent part of a season with a repertoire company on a tank route, engaged herself one season (according to the newspapers, at least) to marry an impecunious Italian Count, and the next season a coming playwright, who, by the way, never came; and so on ad infinitum. Her father, therefore, was not particularly startled at her announcement.

Looking in the direction she indicated he picked out a tall young fellow who was stepping briskly through the crowd. The stranger towered a head above the press; and a goodly head it was, something on the Caesar-Stephen Langton order; so much so, in fact, that the fedora hat which he wore well back on his head looked incongruous, ill-fitted to the brow it shaded. A helmet or a mitre even would have served him better. He was tramping along with eyes fixed straight ahead, quite unmindful of the crowd and unconscious of the effect his appearance had had on one occupant of the big car, stranded just opposite to him in a momentary jam of vehicular traffic.

"So that's my future son-in-law," grunted old Cyrus. "Never set eyes on him before. He'd be ornamental around the house Molly, but don't know as we could make anything but a football player of him. What's his name?"

"I don't know," replied the girl. "This is the first time I have seen him myself."

Marvel gave a gasp. He watched the back of the stranger as it bobbed in and out through the crowd, for a moment or two. "There's one satisfactory thing about it," he said, with relief. "You'll never see him again."

"But I must," exclaimed the girl, earnestly. "You must send James to follow him, to find out who he is and

"There he is, at last!" said she.

where he lives. I can drive the car home."

Marvel opened his mouth to utter a peremptory refusal but got no further than a gruff "I'll be hanged——"

A glimpse of his daughter's face convinced him that she was in earnest. He shrugged his shoulders resignedly and, leaning forward, touched the chauffeur on the shoulder.

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Before a legacy from an only and almost unknown uncle had left him independent with an income of twelve hundred dollars a year, John Danforth had tried his hand at many things. He had first studied for the law, but it had not taken him long to discover that he would never make a lawyer. Then he had secured a position as a travelling salesman for a typewriter concern. The human race can be divided broadly into two classes; those born to sell and those born to be sold to. Danforth was hopelessly in the latter class, as his salesmanager soon found out. Then he became a reporter and would have been a successful one but for the fact that his ideas on the value of news clashed with those of the hard-headed city editor. Danforth had a genius for detail and he lugged inconsequential facts into his stories until they became mere capitulations of cumbersome detail instead of luminous pen-pictures. Often he was so engrossed in getting the little things that he lost sight of the story itself; as, for instance, when he clothed the account of a divorce case in high society with an exhaustive argument on the points which had created incompatibility of disposition between the interested parties and forgot to record the fact that the defendant failed to appear, having eloped the night before with a noted actress!

And so, when the inheritance came, mightily relieved that he would no longer have to bother with the dross details of existence, Danforth settled down to a serious study of science and literature.

Twelve hundred dollars is not much to live on in the city of New York. Danforth got along capitally, however. He boarded with a widow in moderate circumstances. As the study of certain branches of science became of such absorbing interest that the days were always too short to allow any time for recreation or frivolous amusement, he was able to foot his board and tailor bills without difficulty.

When he had walked out of the Planet office for the last time, great thoughts were in his mind. He would write a book, a great book, one that would revive the style of the old masters. When that was done, he would take the time to work up certain fascinating theories on astronomical topics which he had been revolving in the back of his head for some years.

The great book was still unwritten, the project having been abandoned after several fruitless attempts at a start. All that he had accomplished was the publication in a current magazine of an astronomical treatise in which he attempted to prove that the galaxy of systems, which go to make up the universe, revolved around a Heavenly body of inconceivable magnitude, which he agreed with Madler in locating in the Pleiades. This theory, conceived with imaginative ingenuity and expounded with a certain brilliancy of style, had attracted widespread interest. Scientists had united in attacking it and Danforth had been the storm-centre of an international controversy. His fame had been short-lived, however. The public had long since forgotten him and his plausible theory as well.

His circle of acquaintances had been gradually growing narrower since his withdrawal from active employment, and it was with considerable surprise that one morning at breakfast he found a letter at his plate which came quite apparently from an unknown source. His surprise deepened as he slowly digested the contents.

John Danforth, Esq.

Dear Sir:—

It was with considerable interest that I read your recent article on the existence of a cosmical centre. In regard to the conclusions you reach I thoroughly agree. Although my name may be familiar to you only as a man of business, allow me to assure you that I have taken the deepest interest in scientific research, and only the demands made on me by my business interests prevent me from devoting a portion of my time at least to the pursuit of a wider knowledge.

I would like to see you personally and would suggest, if you find it convenient, that you call at my house to-morrow afternoon before 4 o'clock.

Yours very sincerely,

CYRUS MARVEL.

Danforth whistled softly to himself. Across the table sat a stoutish young man, finishing his breakfast leisurely. Jules Cavendish was the only other guest then gracing the board of the Widow O'Shaughnessy. In fact, up to the time of Cavendish's arrival two weeks before, Danforth had been the sole boarder and accordingly had looked on the advent of another one as somewhat of an intrusion. Cavendish, it turned out, spent his days on or around Wall Street; in what capacity he did not say. He was inclined to give himself airs and even on occasions to patronize Danforth. He always had money and spent it freely. In a number of other ways he had managed to make himself obnoxious.

It was rather natural therefore that Danforth should fold the letter back into its envelope and say carelessly:

"Ever met Cyrus Marvel, Cavendish?"

"Er—yes," replied the other.

"He writes that he wants me to call and see him. Rather a singular request from him."

"It's downright queer," affirmed Cavendish, showing interest. "He's a funny old fish, is Cyrus—as close as an oyster. In addition to his offices downtown, he has two wires into his house and does most of his business there. Has a whole office staff there every day. He seldom goes out unless he has to Why there are lots of men on Wall Street who have never set eyes on him. I can't understand what he wants to see you for. You have'nt enough money for him to bother taking." This last with a loud laugh.

"The appointment has nothing whatever to do with business," said Danforth, testily.

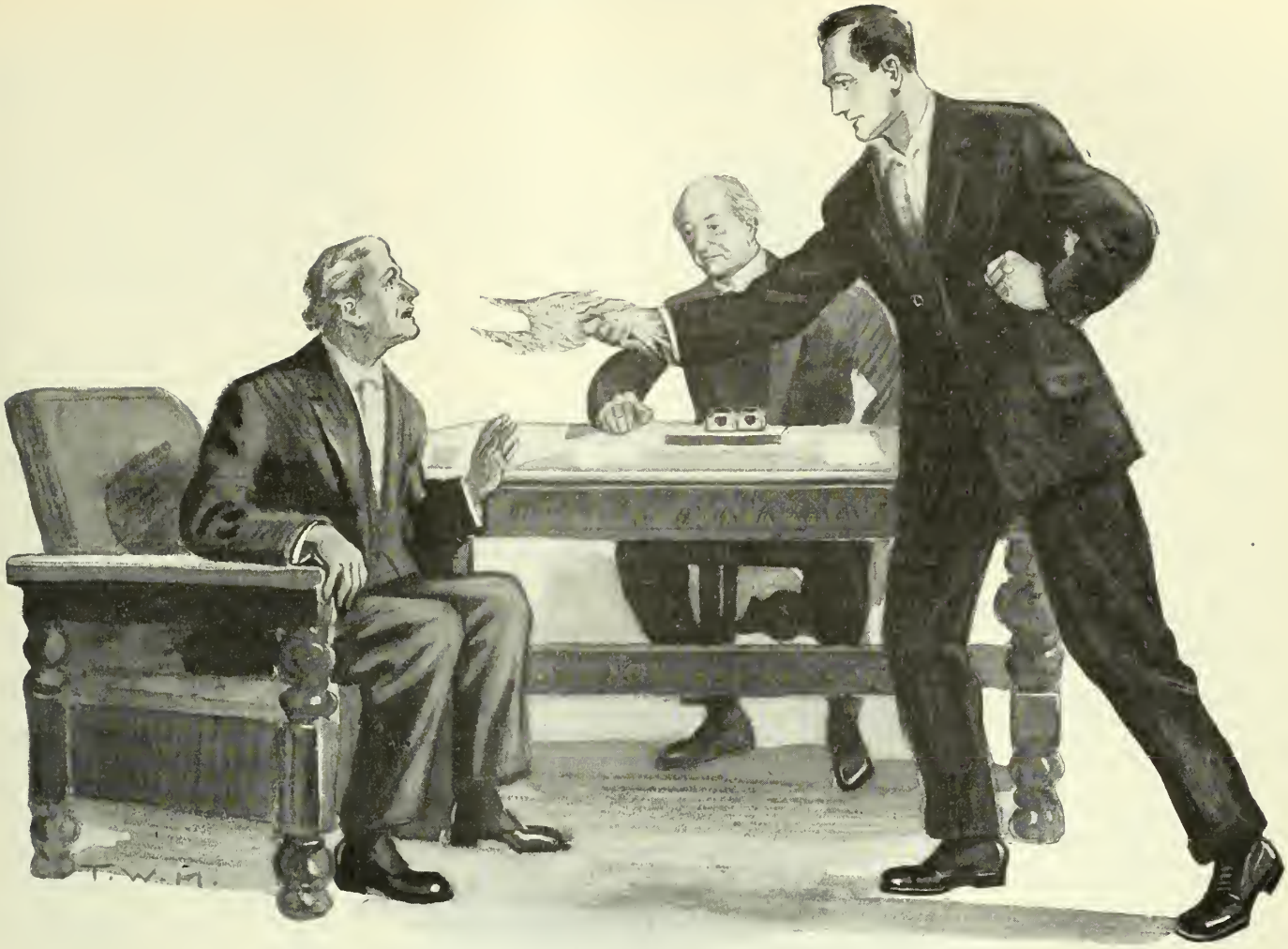
"Don't tell me that old Midas Marvel has a thought for anything outside of money," said Cavendish, rising and shoving his chair back from the table.. "If you meet the daughter put in a good word for me, will you? She's the only girl I've ever seen that could make me an applicant for the Ancient and Honorable Order of Henpecked Husbands."

Danforth kept his appointment the following afternoon. He was ushered into the presence of America's richest man without any delay. Many millionaires, senators, yes even Cabinet members, too, had sat around the ante-room of Cyrus Marvel waiting patiently for an audience with the great man. If Danforth had stopped to think he would have been mystified to account for his having acquired, unbeknown to himself, the open sesame.

Cyrus Marvel was a massive old man His powerful head, his square hewn features and his grizzly hair gave him a stern, almost a forbidding look. He was a masterful talker, magnetic and convincing, pouring out a rapid-fire succession of staccato sentences that bristled with unconscious epigrams. He engaged Danforth in conversation on certain topics of scientific interest and the knowledge he displayed was incredible in a man supposed to spend every waking minute in the pursuit of the almighty dollar. Soon he carried Danforth beyond the point where the latter remembered that Cyrus Marvel was a multi-millionaire whose time during business hours, roughly speaking, was worth upwards of $1,000 a minute. For three-quarters of an hour they talked unrestrainedly as men do when on a topic of mutual interest and during the whole time they never once got nearer to the earth than Mars. Finally Marvel rose.

"I had an object in getting you here, Mr. Danforth," he said. "It's this way. I've a rather complete library here and the finest private observatory and laboratory in America. I've just completed the installation of a telescope—the second biggest on the continent. They are here for use and I want you to use them. With such facilities you would probe behind the veil and find some of the secrets of space, my boy. I want you to make full use of everything I have, to come and go as you will. Come along now and I'll show you around."

He hurried off, conducting Danforth to another part of the building where he introduced him to the wonders of the library and observatory. Danforth was amazed at the completeness of the equipment, at the seemingly unending tiers of books and at the huge telescope, through which a man could gaze at stars so far away that it took millions of ages for their light to reach the earth.



"The whiskers came away in his hand."

"Now I must get back," said Marvel, briskly. "Make yourself perfectly at home here. Come as often as you feel inclined to and sometimes run into the office and see me. If there's anything you want to find out about this place, just ask Miss Gray, She's my librarian. Thought she was here to-day but guess she left early. I've arranged everything for you. There's a button. If you need anything, ring. Good bye." And he was off before Danforth had time to utter a word of thanks.

Danforth paid several short visits to the Marvel mansion during the next month. On these occasions he found none of the members of the household at home. Marvel himself was racing back and forth across the continent on matters pertaining to a railroad merger he was engineering. His maiden sister, who kept house for him, and his daughter were on a tour of the summer resorts, as Danforth learned from the newspapers. The librarian had apparently seized the opportunity to enjoy a holiday.

One morning he put in an early appearance and after an hour's work in the observatory, walked into the library in search of a certain book. A girl was seated at the librarian's desk. Her back was toward the door by which he had entered and, as she was deeply engrossed in the pages of a magazine, she did not observe his entrance. Danforth for his part was in a preoccupied mood and he had almost stumbled over her before he became aware that he did not have the room to himself.

"I beg your pardon," he said, hastily. "I am very clumsy. You see I didn't know anyone was here. You are Miss Gray, I presume. Perhaps Mr. Marvel has spoken to you about me. My name is Danforth."

"Oh, yes, Mr. Danforth," said the librarian. "Mr. Marvel has instructed me to do everything I can to assist you in your work."

"It is very good of him—and of you," said Danforth, absent mindedly. "By the way, there's a book that I want very particularly just now and I suppose you must have it somewhere. If you will be good enough—"

He stopped short. His gaze, which up to that time had been focused on some indefinite point in space, had suddenly settled on the girl. The surprise he experienced was enough to hold him transfixed for several moments.

At first he was conscious only of a pair of eyes—large, luminous orbs of bewildering darkness and depth. Gradually he became aware of the fact that these wonderful eyes were set in a face which presented claims to attention on its own account; an altogether charming face. oval in shape, well nigh perfect in profile and with several dimples thrown in for good measure. A heavy mass of brown hair shaded the face. Finally, Danforth learned that it belonged to a young lady of medium height and girlish slightness, attired in a severely business-like but decidedly becoming costume.

"You were going to give me some instructions?" he heard a voice ask, a voice of such charm that it associated itself at once with the owner of the eyes, dimples and hair. The words were uttered, however, in a crisp and business-like tone.

"Yes," said Danforth, recovering himself, partially. "Could you get me this book of Huxley's, please."

He wrote the title on a slip of paper, handed it to the girl and retired hastily. Danforth had always been afraid of girls. Had the librarian lived up to the half-formed expectations he had entertained of her—a bespectacled spinster, thin, thorough and thirty-five—he would have placed himself on a friendly footing at once. But the fact that she had turned out a mere slip of a girl and a beauty at that, drove him from the room speechless, his six foot two of powerful masculinity in full retreat after the first tilt with five foot five of demure femininity. He turned at the door. She was watching him with a suspicion of a smile; amusement at his discomfiture, he thought.

Danforth did not make much progress on the work he had in hand that morning. His mind ran on brown eyes and

cleft chins rather than on the constellations. Several times he started back to the library on some pretext or other but stopped before he got to the door. When Miss Gray brought him the required volume, he accepted it with a brief word of thanks and plunged into it with a pretence of active absorption, despite the fact that he believed he could detect signs of willingness on her part to stay and talk, if properly urged. When she had gone, he threw the book down and anathematized himself roundly for a tongue-tied bumpkin.

Danforth came back every day after that. He arrived early and stayed late. The librarian showed equal diligence, being engaged in indexing a portion of the library. Danforth became expert at trumping up excuses to take him there and it was not long before he had been pressed into service as an indexing assistant. They got on famously after Danforth recovered from his first awe. Miss Gray proved a masterful young person, ordering him about freely; and Danforth delighted to obey. Many an hour they put in together busily at work on the books, she chatting gaily, he listening, watching, and admiring, but talking little; not having much opportunity for the latter, it is true. Occasionally he talked of his research work and the girl listened intelligently. Danforth decided that it was very pleasant indeed to have a person to expound his theories to, who had the rare gift of understanding.

At the same time he managed to make considerable progress with his work. Thanks to the boundless resources of the Marvel library, he gained added light on problems which he had been studying in a rather dilettante way previously. With the information at his disposal he began the development of a theory based on the movements of the solar comets. Gradually he became more and more absorbed in his work and, although he did not lose his desire for the company of the fair librarian one whit, he found it impossible to gratify that desire as much. As his research brought new facts to light, strengthening the conclusions he had reached *a priori*, Danforth found less and less time to give to the new index. His relations with Miss Gray became limited to brief conversations during intervals of his work. That his defection had not pleased her was apparent. Her attitude toward him showed a mingling of coolness and reproach. Danforth was too busy to notice this.

Finally one morning he forged the last link into his chain of logic. The sequence of argument had been completed, the last word written. On finishing a great task, a man's first impulse is to find some one to talk it over with. One can imagine the inventor of the printing press running to skeptical old Mrs. Gutenburg with the first inky proof in his hands. With some men it takes the form of hunting up a reporter.

Danforth dropped his pen and strode into the library. Miss Gray was sitting at her desk, busily engaged with scissors and a pot of paste.

"Come here," he exclaimed, commandingly. In the triumph of the moment he had lost all diffidence and restraint. He took the girl by the hand and half led, half pulled her along in headlong haste to the observatory.

"It is finished," he exclaimed. "I cannot find a flaw in it. It will establish a new direction for astronomical research. I'll show you—" And he plunged into a lengthy explanation which would perhaps have been intelligible to a college professor. The girl followed him intently and patiently.

"There you have it in a few words," said Danforth, at the conclusion of his harangue.

Then he realized that he still had possession of her hand. In order to better understand certain diagrams to which he had referred, she had been compelled to lean one elbow on the table and their hands had been very close together. Danforth had not realized this before. He did now. It thrilled him. Her deep brown eyes were fixed upon him at a distance of little over a foot.

"You are wonderfully beautiful," he exclaimed.

"It had taken you longer to find that out than to discover the movements of comets," she whispered.

The sciences and all pertaining thereto slipped entirely from Danforth's mind.

"No, no," he protested. "I knew it the first time I saw you; or rather about two minutes afterward. Your beauty made me afraid of you."

He had taken the other hand now.

"You seem to have recovered from your fear," said the girl. Their eyes met and a moment afterwards the distance between them had been shortened to—well, practically nothing at all.

Danforth realized that he had taken her in his arms, and the thought of his daring did not arouse any thrill of apprehension.

"I don't think I am afraid any more," he said.

He raised one arm to coax her face into a certain position and the next moment she had broken away.

"I must get back to my work," she said, a little breathlessly.

And for the second time Danforth let her go, when he wanted above everything else to keep her, and when, in addition, her eyes contained the message of her willingness to stay. But a prudent consideration had entered his mind. If she remained in the room, he would make love to her. A man should not make love to a girl unless he intended to marry her. And a man with twelve hundred a year had no right to marry. Ergo, he must not urge her to remain.

A few minutes afterward, however, he put his head in the library door and announced: "You are going to lunch with me to-day. I won't take a refusal this time. I will come for you in half an hour."

At the end of the half hour he returned and found her ready. Thoroughly enamoured, he sought out the most expensive restaurant he knew of and recklessly squandered two weeks' income. "What a delightful little place," she said, and Danforth remarked that she behaved as though she was thoroughly accustomed to dining in public.

That remark gave Danforth considerable food for thought. He continued thinking on the same strain off and on during the rest of the day. By breakfast next morning, he had reached a certain conclusion.

Twelve hundred dollars a year was a mere pittance, beggarly even for a fellow with no expensive tastes. It precluded all possibility of intimate friendships with members of the other sex and made the thought of marriage an absurdity—if a fellow happened to think of marriage, that is. Now a girl like—well, like Miss Gray—had certain acquired ideas and tastes which would make a substantially large income a necessity before a fellow could presume—. Why, probably Marvel paid her more than that. Her dresses were always plain but they had something about them that even to his uninitiated eyes suggested worth. He might have spelled it with a capital W if he had known.

* * *

"Danforth, do you want to make some money?" asked Cavendish, who was seated at the other side of the breakfast table.

"You must be a mind reader," said Danforth. "I do want to make some money—badly. I was just thinking about it."

"Would you care how you made it?" asked the other in his habitual off-hand way.

"I would turn my hand to any work," replied Danforth.

Cavendish suddenly leaned forward and regarded the other intently and searchingly.

"See here," he said. "Just what are your ideas on the question of right and wrong? Would you countenance the methods of Wall Street, the subterfuges of financiers? I would like to know, just for curiosity's sake, if you would consider right anything that stopped short of being legally wrong."

"I don't know," said Danforth, passing up his egg with a show of lack of appetite—the inevitable symptom. "I confess to ignorance of the methods of your Wall Street associates, Cavendish. They may be all right though one hears plenty of evidence volunteered to the contrary."

"I have a little plan afoot," said Cavendish, choosing his words cautiously, "which promises to be highly remunerative. It would violate no law and would be regarded as strictly legitimate by every man with any experience in—well, let us say frenzied finance. I need a man to help me. You seem to have all the necessary qualifications, with one added advantage. You have access to old Cyrus Marvel."

Danforth began to show a live interest. He returned the steady gaze of the corpulent Cavendish with equal intentness.

"What would that have to do with it?" he asked.

"Well," said Cavendish, with an easy laugh, "it's this way. If our enterprise is successful, old Cy will pay the piper. With your free entry to his house, you might be able to get certain information necessary to our scheme which I

would have difficulty in obtaining any other way."

Danforth felt the hot blood surge to his face. He had an almost uncontrollable desire to lean across the table and strike Cavendish. The latter's square, bluish chin offered a tempting target. But he checked the impluse.

"Then you mean," he said, trying to speak coolly, "that your plan is to gouge—is that the word?—Cyrus Marvel, and to accomplish it through my friendship with him?"

"Don't flatter yourself," laughed Cavendish, bringing out his cigarette case and handing it across the table. Danforth shoved it back with a shake of the head. The other took a cigarette himself and lighted it before resuming. "Cyrus Marvel doesn't know the meaning of the word friendship. He's a wolf in human guise. Marvel is the Ishmael of big Interests. He preys on everyone; and everyone who dares preys on him. Take it from me, my worldy unwise friend, he has some use for you or he would never have taken you up. Friendship? Snades of a thousand bankrupts! How much friendship would you expect from a boa constrictor? Danforth, don't stay out on sentimental reasons. Why, Marvel himself would laugh if he knew anyone had refused a good chance to gouge him. I thank you for the word. Gouge is good."

"What would I have to do?"

Cavendish blew a ring of smoke and watched it curl upward toward the ceiling before replying.

"Yours would be a character part chiefly," he said. "Get on a certain train at a certain place. Wear a plain grey suit, flannel shirt with collar, but no tie. Go through the train until you strike an old codger dressed like yourself. Kiss him on the right hand and say: 'Have ye eaten the book?' "

"That's enough," said Danforth, his fists again itching to get into action. "I warn you not to try practical jokes on me. I'm short tempered at times."

Cavendish became all seriousness at once. "Pardon me," he said, with a placating smile. "I should have given you some explanation before springing that comedy stuff. Still that is exactly what you are expected to do. It would be part of your share of the work. Before I go into this further, I want some assurance that I'm not wasting my time. Are you open to come in on this?"

If the thought had not occurred to Danforth that, out of regard for Mr. Marvel's interests he should hear what the proposition was, he would have ended the discussion there and then. But it appeared to him strongly that he should find out as much of the nefarious scheme—for such he judged it to be—as he could. In this way he might be able to thwart it.

"You've got to show me it's worth while," he said, trying to adopt his choice of words to the situation.

"Very well then. Do you know the T. & O. P.? You may think it's a star or an asterisk—oh, well then, asteroid. But it's not; it's a railroad," said Cavendish, with thinly veiled contempt of the other's ignorance of business

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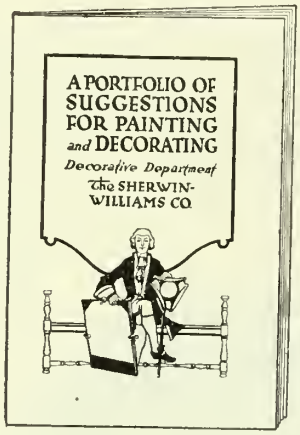

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matters. "If you knew anything about such things, you'd be aware of the fact that the T. & O. P. is a rickety old road, connecting two other lines. It's recognized as the prize white elephant of the railroading industry. It hasn't paid a dividend in twenty years. The stock as a result has been down as close to zero as any stock could ever get. Then Cyrus Marvel bought out the two lines it connects—he has a scheme on to control a direct line from coast to coast—and so he started gunning for T. & O. P. The directors are a stubborn, fussy lot. They didn't care to stand and deliver at the command of this old highwayman of high finance. They fought back. And so far, Marvel has not been able to get control. News of the fight leaked out and, as everyone backed Marvel as the ultimate winner—he always wins—T. & O. P. started to go up. You see, if he got the road, he would make something of it. So for the first time in a quarter of a century, the bulls took a whirl at old Top.

"Now, then. To-morrow is the annual meeting of the company. If it transpires that Marvel has bagged control, stocks will go up still higher. If he has failed to acquire control, there will be a landslide. T. & O. P. stock will go down out of sight. If we could make it sure that Marvel did not get control, what a chance to make a killing!

"I happen to know that a block of Top stock is in the hands of an old party up near Albany—enough to control the situation. Marvel learned of this a few days ago," went on Cavendish, speaking in a low tone and rapidly. "He has arranged with Spearing, the old party, to come to New York. Spearing's a hard old specimen of the hick tribe, and just as grasping as old Marvel himself. He knows the value of the stock he holds. He won't come down until to-morrow morning and then he'll put in an appearance at the last moment with the stock in hand and sell out to the highest bidder.

"And Marvel will pay. It has become a personal matter with him. His old enemies, the Parlow and Hartley crowd, have quietly lined up behind the T. & O. P. directors with the amiable object of blocking his transcontinental scheme. Marvel will beat them if it costs him a million. He has an agent up there watching Spearing as close as a two-dollar plunger watches the bookie. As soon as Spearing gets on a train, Marvel will get word by wire. Another trusted agent will be at the station to meet Spearing and as soon as he sets foot on the platform he'll be whisked off in a taxi to Marvel's private office. The opposition won't get even a sidelong glance at him—unless we shove in and mix things up a bit.

"Our plan, of course, will be to get hold of Spearing ourselves and then tip off his whereabouts to the highest bidder. And it isn't going to be child's play either, getting hold of the old boy. He thinks every second man in New York is a bunco steerer and that gold bricks are commoner here than testaments. If a stranger were to speak to him, he'd yell for a cop. And if he saw me—well, we are acquainted and for some reason

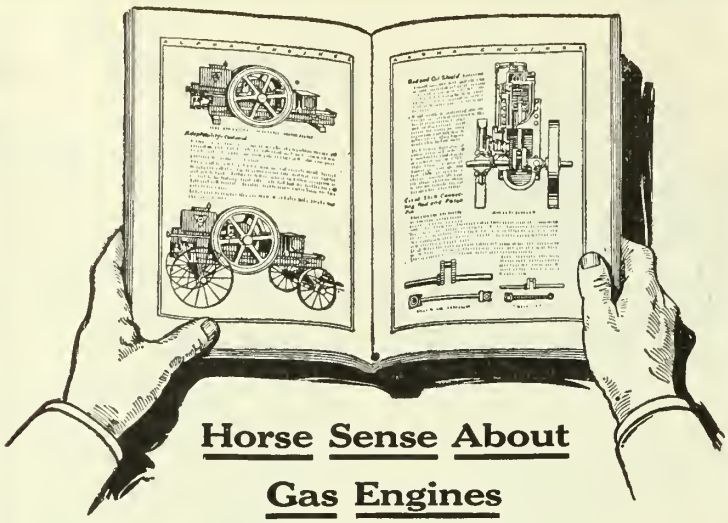
or other he has formed a highly erroneous opinion of my character. I'll have to stay out of his sight, that's certain.

"Now here's the plan. I'll be on the platform when the train pulls in as I know every one of the Marvel crowd, I'll pick out whoever is waiting for Spearing and be right at his elbow. As soon as the train comes in sight, I'll jostle up against him and accuse him of picking my pocket. I've bribed a station policeman to be on the job and, at the first sound of altercation, he'll take both of us unceremoniously by the collar and escort us out. It will take Marvel's man some time to explain himself. In the meantime Spearing will have arrived. Unfortunately it is out of the question for anyone to accost him there without having some ready proof of connection with the Marvel crowd. The old man will be carrying his suspicions on hair trigger.

"No, it will have to be done by somebody getting acquainted with him on the train. And there's only one way that you can get into the good will of Eli Spearing. He's strong on the religious stuff. Belongs to some sect that call themselves Seven Sealers. I don't know much about their outlandish belief except that they base it on what somebody found out when the seventh seal was opened. He had to eat a book to find it out. So when a man has swallowed their belief, they say he has swallowed the book; and that makes him a full fledged Seven Sealer. Sounds incredible, doesn't it? Still, that's one of the mildest things about them. They tolerate clothing only as a concession to decency and a means to keep warm. For that reason, they dress simply and eschew such luxuries as neckties. They define Heaven as the home of Sealers only and hell as the abode of the rest of mankind. Whenever two of them meet, they kiss each other's hands and babble texts.

"Is the beauty of my plan beginning to dawn on you? You get on at a suburban station decked out in full Sealer regalia, run across the old man and shoot him the pass-word. By the time you pull into the depot, you're as thick as thieves. Volunteer to help him find his way about town. You will have him cinched, for he doesn't know anything about the city and the noise will kind of get to him at first. A taxi will be waiting. Bundle him in and give the driver Marvel's address. He'll take you instead to a certain office on Broadway. Tell a red-headed clerk with spectacles that you want to see Mr. Marvel. The clerk will say that Mr. Marvel has been called away on unexpected business but will be back in half an hour. Then he'll slip into a back room and get me on the 'phone. I'll go right to Marvel and offer to tell him where Spearing is, if he'll pay my price. With the meeting on at 1 o'clock, Marvel will have no time for dilly-dallying. He'll have to come across or fail to secure control.

"If he doesn't pay, I'll go to Parlow and Hartley and they will. Then we can use what we get out of it to play old Top on the market with advance in-



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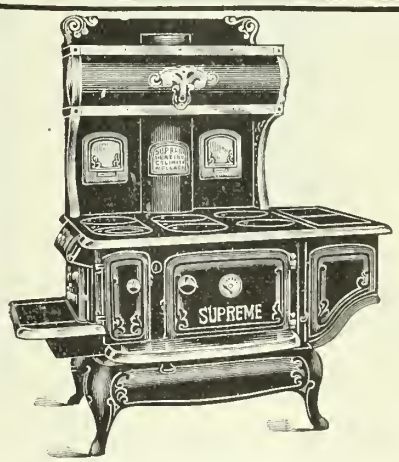

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What and Why is the Internal Bath?

By C. GILBERT PERCIVAL, M.D.

Though many articles have been written and much has been said recently about the Internal Bath, the fact remains that a great amount of ignorance and misunderstanding of this new system of Physical Hygiene still exists.

And, inasmuch as it seems that Internal Bathing is even more essential to perfect health than External Bathing, I believe that everyone should know its origin, its purpose and its action beyond the possibility of a misunderstanding.

Its great popularity started at about the same time as did what are probably the most encouraging signs of recent times—I refer to the appeal for Optimism, Cheerfulness, Efficiency and those attributes which go with them, and which, if steadily practised, will make our race not only the despair of nations competitive to us in business, but establish us as a shining example to the rest of the world in our mode of living.

These new daily "Gospels," as it were, had as their inspiration the ever-present, unconquerable Canadian Ambition, for it had been proven to the satisfaction of all real students of business that the most successful man is he who is sure of himself, who is optimistic, cheerful and impresses the world with the fact that he is supremely confident always—for the world of business has every confidence in the man who has confidence in himself.

If our outlook is optimistic, and our confidence strong, it naturally follows that we inject enthusiasm, "ginger," and clear judgment into our work, and have a tremendous advantage over those who are at times more or less depressed, blue, and nervously fearful that their judgment may be wrong—who lack the confidence that comes with the right condition of mind, and which counts so much for success.

Now the practice of Optimism and Confidence has made great strides in improving and advancing the general efficiency of the Canadian, and if the mental attitude necessary to its accomplishment were easy to secure, complete success would be ours.

Unfortunately, however, our physical bodies have an influence on our mental attitude, and in this particular instance, because of a physical condition which is universal, these much-to-be-desired aids to success are impossible to consistently enjoy.

In other words, our trouble, to a great degree, is physical first and mental afterwards—this physical trouble is simple and very easily corrected. Yet it seriously affects our strength and energy, and if it is allowed to exist too long becomes chronic and then dangerous.

Nature is constantly demanding one thing of us, which, under our present mode of living and eating, it is impossible for us to give—that is, a constant care of our diet, and enough consistent physical work or exercise to eliminate all waste from the system.

If our work is confining, as it is in almost every instance, our systems cannot throw off the waste except according to our activity, and a clogging process immediately sets in.

This waste accumulates in the colon (lower intestine), and is more serious in its effect than you would think, because it is intensely poisonous, and the blood circulating through the colon absorbs these poisons, circulating them through the system and lowering our vitality generally.

That's the reason that biliousness and its kindred complaints make us ill "all over." It is also the reason that this waste, if permitted to remain a little too long, gives the destructive germs, which are always present in the blood, a chance to gain the upper hand, and we are not alone inefficient, but really ill—seriously, sometimes, if there is a local weakness.

This accumulated waste has long been recognized as a menace, and Physicians, Physiculturists, Dietitians, Osteopaths and others have been constantly laboring to perfect a method of removing it, and with partial and temporary success.

It remained, however, for a new, rational and perfectly natural process to finally and satisfactorily solve the problem of how to thoroughly eliminate this waste from the colon without strain or unnatural forcing—to keep it sweet and clean and healthy and keep us correspondingly bright and strong—clearing the blood of the poisons which made it and us sluggish and dull spirited, and making our entire organism work and act as Nature intended it should.

That process is Internal Bathing with warm water—and it now, by the way, has the endorsement of the most enlightened Physicians, Physical Culturists, Osteopaths, etc., who have tried it and seen its results.

Heretofore it has been our habit, when we have found by disagreeable, and sometimes alarming symptoms, that this waste was getting much the better of us, to repair to the drug shop and obtain relief through drugging.

This is partly effectual, but there are several vital reasons why it should not be our practice as compared with Internal Bathing.

Drugs force Nature instead of assisting her—Internal Bathing assists Nature and is just as simple and natural as washing one's hands.

Drugs, being taken through the stomach, sap the vitality of other functions before they reach the colon, which is not called for—Internal Bathing washes out the colon and reaches nothing else.

To keep the colon constantly clean drugs must be persisted in, and to be effective the doses must be increased. Internal Bathing is a consistent treatment, and need never be altered in any way to be continuously effective.

No less an authority than Professor Clark, M.D., of the New York College of Physicians and Surgeons, says: "All of our curative agents are poisons, and as a consequence every dose diminishes the patient's vitality."

It is rather remarkable to find, at what would seem so comparatively late a day, so great an improvement on the old methods of Internal Bathing as this new process, for in a crude way it has, of course, been practised for years.

It is probably no more surprising, however, than the tendency on the part of the Medical Profession to depart further and further from the custom of using drugs, and accomplish the same and better results by more natural means; causing less strain on the system and leaving no evil after-effects.

Doubtless you, as well as other Canadian men and women, are interested in knowing all that may be learned about keeping up to "concert pitch," and always feeling bright and confident.

This improved system of Internal Bathing is naturally a rather difficult subject to cover in detail in the public press, but there is a Physician who has made this his life's study and work, who has written an interesting book on the subject called "The What, The Why, The Way of the Internal Bath." This he will send on request to anyone addressing Charles A. Tyrrell, M.D., Room 359, 280 College Street, Toronto, and mentioning that they have read this in The Farmer's Magazine.

It is surprising how little is known by the average person on this subject, which has so great an influence on the general health and spirits.

My personal experience and my observations make me very enthusiastic on Interial Bathing, for I have seen its results in sickness as in health, and I firmly believe that everybody owes it to himself, if only for the information available, to read this little book by an authority on the subject.

formation as to whether it will go up or down. There's a fortune in it."

"And what will happen if Spearing gets suspicious or impatient and starts out to find Marvel on his own account?" asked Danforth, after a pause.

"Don't worry about that," said Cavendish. "You get him into that office and the rest will be easy. Without straining my mind any I can think of about ten different ways of keeping Eli under cover."

"Look here," said Danforth, "How did you get all this inside information?"

"That," said Cavendish, with an easy smile, "I do not care to divulge. I have a personal connection with one of the interested parties."

"Does your connection assure you of getting information as to the train Spearing will come on? There are several morning trains he might take."

"There you have me," confessed Cavendish, showing a little uneasiness. "I don't suppose Spearing has decided himself as to which he will take. There's one thing certain about it. The information will be wired into Marvel's office to-night or first thing in the morning. That's where you come in. You must secure that information in time to enable you to get out and board the train at a suburban point."

• • •

At 10.15 next morning Danforth escorted a stoutish man, with a beard so long and full that it absolutely concealed his lack of a necktie, from the platform of the Grand Central depot and hailed a taxi. He bundled his companion in with great expedition and gave the driver instructions to drive to the home of Cyrus Marvel as fast as the limitations of the law and his machine would allow. When they arrived, Danforth escorted his man into the private office of the millionaire.

"This is Eli Spearing," he said. "My meeting him is a matter that will require some explanation. There will be plenty of time for that later, however, when you have finished your business with him." And he started for the door.

Marvel dismissed a stenographer, who had been taking dictation, and motioned to Danforth to wait.

"Let's have the explanation now," he said. "I already know something of this. But go on."

Danforth explained briefly how he had been approached by Cavendish and how he had ostensibly fallen in with the scheme in order to protect Marvel's interests where possible. He told of getting on the train, of striking up an acquaintance with Spearing by pretending to hold the same faith, and finally, of his volunteering to take the old man to Marvel's office.

"I suspected it," said Spearing, with a grating chuckle, when the recital came to an end. "You're a poor actor, young man. I spotted you right off. Next time you attempt to pass yourself off as a man of religious turn, study the scriptures first. I knew that my coming to New York was expected here and, when there

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TRADE MARK

was no one at the station, I felt sure something was wrong. I had half a notion to call the police and hand you over as an imposter. Then I thought I'd let you go ahead and get a sure case. But if that driver hadn't come straight here—I know something of New York, after all—the trip would have ended up suddenly and the police would have you now, young man."

"And this man Cavendish—" began Marvel.

"Is my nephew," declared Spearing, with another chuckle, "and a scoundrel he is. He's got all the family shrewdness without any of our moral ballast. One of these days, he'll trip up."

"That explains how Cavendish got his information," put in Danforth.

"It does not," rasped Spearing. "He didn't get any information from me. He had confederates in this very office."

"Nothing could get out at this end," asserted the millionaire, positively.

"Explain to me how you found out when I was coming to New York," demanded the holder of the controlling stock.

"You have been watched for days by a confidential agent of mine."

"He followed me to the station and wired you I suppose. Now here's the point. I didn't make up my mind as to what train I would come down on until five minutes before I started. How, then, did the information about the train get around, if it didn't leak out in the office here?"

"Perhaps Mr. Danforth can explain," said Marvel.

Danforth hesitated: "The information came from this office," he said finally.

"Then," said Marvel, "I believe I can easily find out who was responsible."

"Mr. Marvel, I wish you to understand that my object in getting the information," declared Danforth, earnestly, "was a worthy one. Still, if there is any blame to attach to the incident it belongs absolutely to me."

"The party who assisted you—"

"Knew that I needed the information to prevent Cavendish from carrying out his scheme. I trust that you will not endeavor to probe into this matter any further," said Danforth, anxiously. "I would indeed regret if any harm came out of this to the one who innocently assisted me."

"I am not inclined to blame Miss Gray," said Marvel, drily. "You see, I am a good guesser."

"That's all very well," broke in Spearing, in his high pitched voice. "Just the same if any employee of mine, man or woman, gave out information about my affairs. I wouldn't bother going after the motive. I'd bounce 'em out right off. I want dependable help."

Spearing had a nervous habit of fingering his whiskers. Several times, Danforth had imagined he saw something familiar and yet baffling about the old Seven Sealer. As Spearing ended up with a vicious bob of the head, Danforth, who had been fixing him with an indignant stare, glimpsed something which made him sit up with surprise. Leaning over suddenly and reaching out,

he seized the ample hirsute appendage of the old man and gave it a tug. The whiskers came away in his hand. Jules Cavendish stood, or rather sat, revealed.

"Cavendish," gasped Danforth, hardly able to believe his eyes. "What kind of a trick is this?"

"My cue to exit," said Cavendish, getting up with a laugh. "I'm rather put out, Danforth, that you were able to detect my disguise. Rather prided myself it was good. See you later." And he strode with a jaunty air out of the room.

"There is an explanation due you now," said Marvel, plunging at once into the breach. "It will be given in due time. For a time permit me to dismiss this incident entirely, though I want first to thank you most heartily for the part you took in my interests. I believe you were entirely influenced by a regard for my welfare."

"I bungled things terribly somewhere," said Danforth, highly puzzled at the turn of events.

"My sister and daughter have returned home and I want you to dine with us to-night," went on Marvel. He leaned over and touched the younger man on the arm. "Danforth, I'm a man of few words. When I desire a thing done, I go the most direct way about to get it done. I tell you frankly that nothing would please me better than for you to marry my little girl. You have convinced me of your honesty and worth. If you ever try to win my girl, you will do so with my full approval."

To be nominated as the husband of the heiress of countless millions by the possessor of the millions himself was so complete a surprise that Danforth was too taken aback to reply for a moment. "You overwhelm me with this evidence of your regard," he said, finally. "I cannot conceive why you should hold so good an opinion of me. But what you suggest is impossible. In the first place, Miss Marvel who is noted for her beauty and accomplishments would never take notice of an ordinary fellow like me. And in the second place, I am in love myself, already."

"Don't make up your mind now," urged Marvel. "Do you realize that all I possess will go to my daughter? It would make you the richest man in America, perhaps in the world."

"I am sorry not to be able to fall in with your views. Soon you will be glad that I did not for you will realize then, as I do now, how completely unworthy I am. Still, I may as well confess that I contemplate robbing you, if not of a member of your household, at least of a member of your staff. I have conceived a very deep regard for Miss Gray."

"Then your mind is made up?"

"Yes."

Marvel touched an electric button and issued a command for the appearance of the librarian. In a minute or two she appeared, a little flushed and excited.

The old financier rose. There was just a touch of the theatrical about the flourish he gave as he announced;

(Continued on page 60.)

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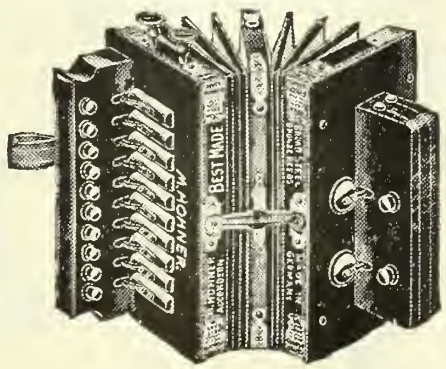

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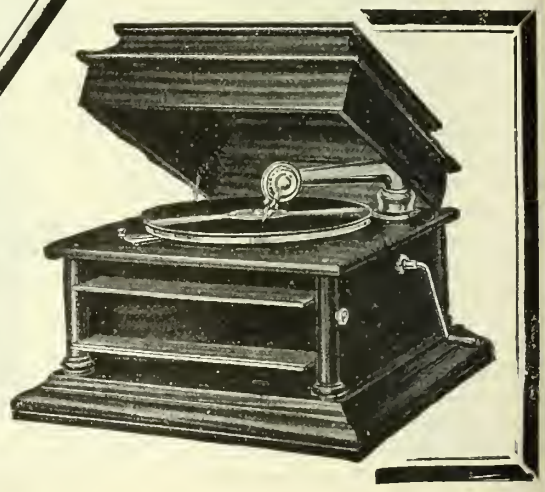

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6381—LADIES' DRESS

A charming model, closed in front, with drop shoulders and a square front yoke. The neck is trimmed with a small ornamental collar. The sleeves are gathered into a deep cuff at the wrist, but may be shortened if preferred. The skirt can be made with or without a seam in the centre of the back. These dresses are made of chiffon cloth, cheviot serge, cashmere and all soft novelty materials. The dress pattern, No. 6381, is cut in sizes 34 to 42 inches bust measure. Medium size requires 4¼ yards of 44-inch material. Price of pattern 15 cents.

6383—LADIES' DRESS

This stylish one-piece dress has a vest in the new style and the sides of the bodice mark each side of it. There is a wide collar across the back continuing along the edges of the front of the blouse. The plain sleeves are set in without fullness. Attached to this blouse there is a four-gore skirt, opening in the centre of the front. The dress pattern, No. 6373, is cut in sizes 34 to 42 inches bust measure. Medium size requires 4⅛ yards of 44-inch material, with ⅝-yard of 18-inch goods for vest. Price of pattern 15 cents.

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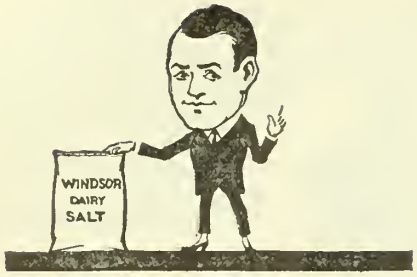

Use Salt that does make good butter - - Windsor Dairy Salt

117

6421—LADIES' DRESSING SACQUE

This is a one-piece garment, sleeves and body cut in one, but if the material be narrow a seam may be placed in the centre of the back. The wide collar should be of lace or embroidery, which may also form the border of the cap. Crepe, silk, challie, French flannel or cashmere will be suitable materials for this garment. The dressing sacque pattern, No. 6421, is cut in sizes 34 to 42 inches bust measure. Medium size requires 4 yards of 27-inch material. Price of pattern 10 cents.

6323—LADIES' TUCKED SHIRT-WAIST

A smart tailored blouse showing a stitched plait over each shoulder to give the necessary fullness to the blouse and one on each side of the closing. The sleeve may be long or short as preferred; when long they are finished with a mannish stitched cuff. A high or rolled collar are both appropriate. Any of the soft silks, thin flannels or cottons may be used to advantage with this design. The pattern, No. 6323, is cut in sizes 34 to 42 inches bust measure. Medium size requires 2¾ yards of 36-inch material. Price of pattern 15 cents.

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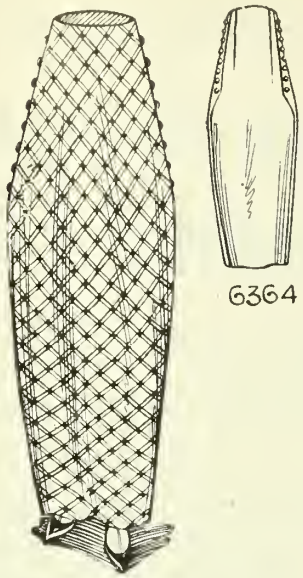
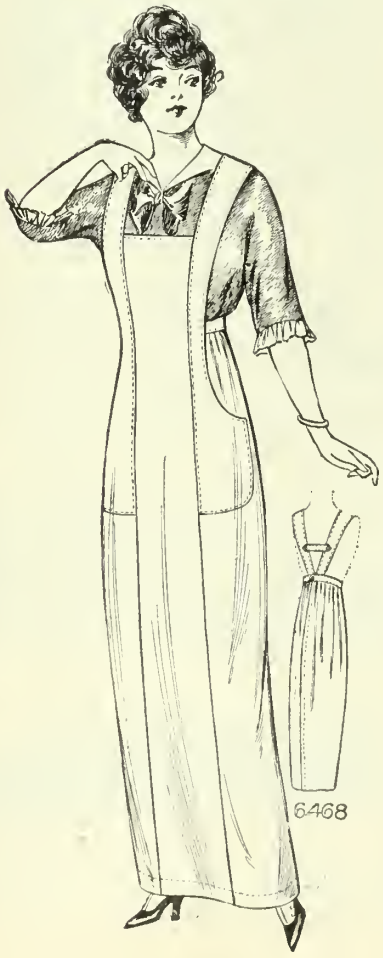


6364—LADIES' SKIRT

This plain two-gore skirt is one of the fashionable peg-top designs. The material widens out just at the hips and thus a little fullness is given in both front and back. The raised or regulation waistline may be used and the closing placed at either side seam. Any of the novelty fabrics, tailor goods and plain serge, cheviot or velveteen will be rich in this style. The skirt pattern, No. 6364, is cut in sizes 22 to 30 inches waist measure. Medium size requires 2¾ yards of 36, 44 and 54-inch material. Price of pattern 15 cents.



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MACLEAN'S MAGAZINE

143-149 UNIVERSITY AVENUE - - TORONTO

6468—LADEIES' KITCHN APRON

This is a plain and practical apron, the front panel fitted into the figure, and forming a bib and tabs over the shoulder. The sides end at the waist and are gathered, while the large pockets are stitched into the front seam. Gingham, calico, brilliantine and all wash materials are suitable for this apron. The pattern, No. 6468, is cut in sizes 34, 38 and 42 inches bust measure. Medium size requires 4½ yards of 27-inch or 36-inch material. Price of pattern 10 cents.

Test of Danforth

(Continued from page 55.)

"Mr. Danforth, I desire to present you to my daughter."

It took a full minute for Danforth to collect his scattered senses after this startling climax to a series of upsetting surprises, He saw the girl glance reproachfully at her father and heard her say, "Now dad, you have spoiled everything," punctuating it with a little stamp of the foot.

The millionaire, puzzled at the reproof, withdrew hastily from the room.

"Yes, it is right. I am Molly Marvel," said the girl, then. "There is a long story to tell. Will I explain it all to you now?"

"Please," said Danforth, but without any enthusiasm. He was beginning to realize that the turn events had taken had completely upset the roseate plans he had been entertaining. He felt that he could have won Mary Gray, the librarian. But with Molly Marvel his pretensions became almost an impertinence, it seemed to him.

She took her father's chair and instructed Danforth to draw one up beside her.

"I hardly know how to begin," she said. "Father should not have given me away so soon. It was planned that you were not to know until—until—"

"Why did you have to be anyone else but Mary Gray?" he asked, gazing at her with somewhat the same wistful expression that a child would use in looking at a toy which had been taken from it and placed back on the shelf as too dear to purchase.

"It need not make any difference with our friendship," she said, softly.

"I shall probably never see you again," he declared, restraining his emotion with an effort. "I—it will be best for my peace of mind to go now."

"You must not say that," urged the girl earnestly. "Do not let my change of name and position be a bar to our continued acquaintance. I want you for a friend, John."

To hear her speak his name sent a thrill through and through Danforth. Emboldened, he reached out as though to seize her hand.

"Mary—" he said. Then he stopped and slowly leaned back in his chair again.

"If I had been Mary Gray," she asked, "would you have stopped there?"

"What I could say to Mary Gray, I

cannot say to the daughter of Cyrus Marvel," declared Danforth, sadly but firmly.

The girl sighed. "I knew it would be that way," she said. "Now that father has given the plot away, I am afraid that I shall have to—Well, I will tell you the story anyway."

"I saw you one day," she went on, "when father and I were out driving along Broadway several months ago. You were on foot and you looked so handsome and noble and nice that I—Well, I have always been very decided in my preferences. I told Dad that he had never refused me anything in my life and that now he simply had to get you for me. He laughed at first but finally had you followed. Then he traced up your record and everything he learned about you was good. So then he decided to arrange things so that we could meet. During this time I had seen you often but you never once deigned to notice me. You seemed always to walk as though you were away up in the clouds.

"Dad and Jules Debord, his secretary, worked out a plan between them. Jules is a bachelor so he persuaded your landlady to take him in under the name of Cavendish. Then Daddy wrote you, and got you to come here often to work at your dear, funny old theories and things. It was lucky you were interested in the sciences for Daddy has always been interested too and it made him kindly disposed to you at the start. It was planned that I was to meet you there as Miss Gray, the librarian, the real Miss Gray being given a holiday. That part of it was my own idea. Father wanted to introduce you in the regular way but the other seemed so much more romantic, and besides I was afraid you would not let yourself like a millionaire's daughter, because it might look like fortune hunting, while you might get to like a mere librarian."

A pause.

"Don't you think this would be a good place for you—well, to make some comment?" she hinted, archly.

"You were quite right, Mary," he said, tensely. "I proved an easy victim of the plan and if it is any satisfaction to you to know it, I did fall in love with the mere librarian. For that matter, I would have fallen in love with Molly Marvel too. I don't see how I could have helped falling in love with you no matter who you might have been."

The girl smiled radiantly. "I believe I make rather a good librarian," she went on. "It was the first real work I had ever done. At first it was hard but gradually I got interested in it and finally I liked it much. I believe this is going to make a great change in my life and that I will never again be the careless, idle butterfly that I was before I met you. Do you realize what a good influence you have been to me, sir?

"Father soon became almost as enthusiastic about you as a certain other member of the family. But it has been one of his rules that you have to test a person before you can really tell what

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The Phonograph with the new voice

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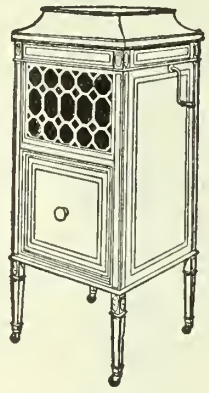

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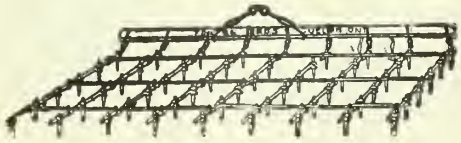

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they are. So he decided to test you. You see, he has always been afraid of fortune hunters where I was concerned. He always said that, when he found a man who did not take any interest either in the making or the spending of money, he would force me to marry that man.

"That was why Jules Debord proposed this scheme to you. He has a most peculiar sense of humor, and nothing would do him but to invent that elaborate story about T. & O. P. stock and to then impersonate Eli Spearing himself. And he insisted that he was going to make you dress yourself in the same ridiculous way. You do look rather funny, John. Do please forgive me for laughing at you. I hope you are not offended at the way we have used you. It worried me a great deal to think that perhaps at some stage you would find out it was all an imposture and go away.

"It was all an invention of Jules Debord's. Father has owned T.&O.P. for a year now. It was a shaky old road when he got it but now it is beginning to pay. There is no such person as Eli Spearing and no such sect as the Seven Sealers. Parlow and Hartley are not opposed to us in business matters now. You see, Father counted on your not knowing anything about such matters as you have never been interested in business."

"I'm afraid that I know more of the canals of Mars than I do of our own railroads. I am beginning to realize the profundity of my ignorance," said Danforth, with a contrite air.

"You are wonderful!" declared the girl, warmly. "You have given your time to the things that really count. The stars are much more interesting than stocks and bonds—now."

"Does not money rank with the things that count?" he asked.

"No," she replied, simply.

Another pause.

"I suppose you think me very bold to have done all this, and very unwomanly to have told you about it," she went on, after a pause. "But what else could I have done? We would never have known each other if I had not taken the initiative in this way. My position was the penalty of being the daughter of a rich man. Do you—think very hardly of me for it?"

"I love you," he said simply. "And, although I shall never forget my grief at losing you, I shall always consider it the greatest thing in my life that I had the opportunity of knowing."

"Please, John," she pleaded. "Don't leave it all to me. I have said too much already."

"Molly," he cried, suddenly, taking both her hands in his, without meeting any resistance on her part. "You are the heiress of countless millions. I have an income of twelve hundred a year. Can I honestly ask for your hand in marriage?"

She did not reply but her bowed head did not seem to express dissent.

"There is a way out of it, darling," he said. "Come with me and be content with what I can give. Leave all this wealth behind you. I'll make up for the years I have wasted. I shall work

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THIS business was organized to manufacture telephone equipment for independent local and municipal systems. Right from the start our equipment made records for efficiency. It did not take long for our goods to acquire a reputation for quality and reliability. As a result, our business has grown by leaps and bounds.

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To judge how fast our business is growing, you'll remember we stated in a previous announcement that our business last year doubled that of the year before. Well, this year the first two months' sales total more than twice the 1912 sales for the same period. More and more is it being recognized by those in the local telephone business, that we are the legitimate people to deal with. There are those in the telephone business who are interested in depreciating the success of the independent telephone movement and the development of municipal systems. On the other hand, our business lies wholly and directly with the independent telephone systems, and it is to our own best interest to look after these systems well, as on their success depends the growth of our business.

If you would like a list of the large independent telephone systems built in Ontario during the last twelve months, just drop us a line. We would be glad to send you a list of the systems, with the make of the telephones they are using. In fact, if you'll name over the large independent systems built during the last year in Western, Northern and Eastern Ontario you'll find that nine out of every ten are using our telephones and equipment.

You are absolutely safe in equipping your system with our telephones. We guarantee them as regards material and workmanship. In fact, we guarantee all our equipment and materials. And in addition, we offer to send our telephones for FREE TRIAL, so you can test and compare them with others right on your own lines before risking a dollar.

Ask for our No. 3 Bulletin—containing the latest information about building telephone lines—Also No. 4, describing our magneto telephones, is free on request.

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By ALBERT VIVIAN

There is no subject of more vital importance to the farmer than that of the best method of maintaining the fertility of the soil. The very evident decrease in the fertility of those soils which have been under cultivation for a number of years, combined with the increased competition and the advanced price of labor, have convinced the intelligent farmer that the agriculture of the future must be based upon more rational practices than those which have been followed in the past. Professor Vivian's experience as a teacher in the short winter courses has admirably fitted him to present this matter in a popular style. In this little book he has given the gist of the subject in plain language, practically devoid of technical and scientific terms. It is pre-eminently a "First Book" and will be found especially valuable to those who desire an introduction to the subject, and who intend to do subsequent reading. Illustrated. 5 x 7 inches. 265 pages. Cloth. Net, $1.

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hard to make a home for you. It will be a poor home for you, sweetheart, but if love can be any substitute for luxury, I offer it to you."

"It is all I want, John," she said, nestling passively and happily in his arms.

"Then you consent?" cried Danforth, in a transport. "You make me the happiest of men. We shall have a little nest of our own, Mary. With you always by to encourage me, how I shall work!"

"I have never cooked anything in my life," she confessed, "but I can try."

"You will make a wonderful cook," asserted John. "Won't it be splendid, just you and I with our own home and our own way to make in the world? You were intended for this rather than for a life of empty pleasure, with no responsibility, nothing to do, the mere shadow of the real life."

"I love to hear you talk that way," she said. Then, after a pause, softly: "And of course, John, if things do not go right and if I made a very, very poor cook, we would always know that there was Dad to fall back upon."

In the Cool of the Evening

In the cool of the evening when the low, sweet whispers waken,
When the laborers turn them homeward, and the weary have their will;
When the censers of the roses o'er the forest aisles are shaken,
Is it but the wind that cometh o'er the far green hill?

For they say 'tis but the sunset winds that wander through the heather,
Rustle all the meadow grass and bend the dewy fern;
They say 'tis but the winds that bow the reeds in prayer together,
And fill the shaken pools with fire along the shadowy burn.

In the beauty of the twilight, in the garden that He loveth,
They have veiled His lovely vesture with the darkness of a name!
Through His garden, through His garden, it is but the wind that moveth.
No more! But oh, the miracle, the miracle is the same.

In the cool of the evening, when the sky is an old story.
Slowly dying, but remembered, aye, and loved with passion still * * *
Hush! * * * the fringes of His garment, in the fading golden glory,
Softly rustling as He cometh o'er the far green hill.

—Alfred Noyes.

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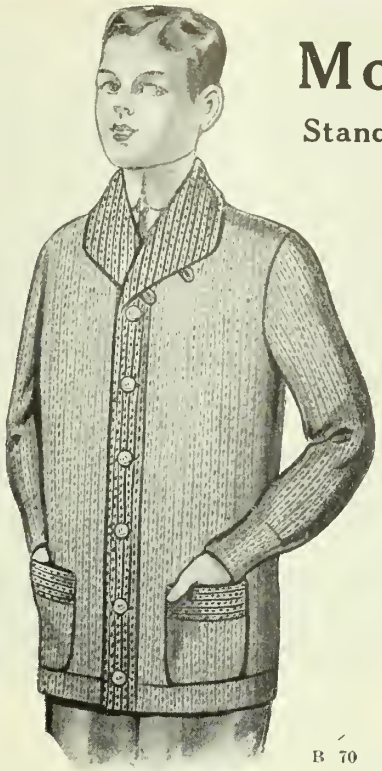

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Motor Hood No. 35

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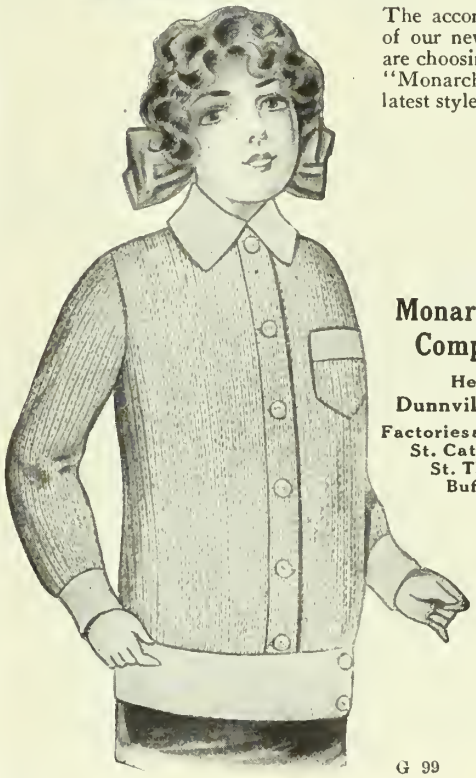

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This little foster mother knows something about the needs of young animals.

The Need of More Food Study

We Know what is Good for Pigs, but what about Humans?

By EVELYN ENDOW

Women everywhere are waking up to the need of a clearer understanding of the bodily requirements of their families and how to supply these. The writer of this sketch, formerly a college lecturer on the subject of foods, and now a mother on an Ontario farm, can be depended upon for reliable and practical information.—Editor.

THE RESULTS from the correct feeding of farm animals have made people more or less stop ridiculing the study of food-stuffs in respect to human beings and many women are taking a keen interest in this subject and are recognizing the fact that it should be part of every woman's education. Schools are teaching the subject, women's institutes are giving lectures on it, the papers are full of it, but there are still so many people yet to reach. The writer has always said that if she were unselfish enough to be a missionary she would go into the poorer sections of a city teaching mothers how to get the best food value for little money. But there is nearly as great a need to teach it among those better able to afford good food. One sees small children with consumption in the country where they even keep a cow and hens, one sees a country-woman dying of anemia and apparently all are the results of improper feeding, as all other conditions seem favorable. Not because they can't afford good food, but pies, pies, pies take the place of wholesome milk puddings. People are learning the value of skim milk, sour milk and butter milk for pigs and chickens, but what about the value to human beings?

The average strong adult manages to get enough nourishment to keep him in good health without seriously considering the subject, but the children, the invalids, and the mothers need their diet regulated. The nourishment may be there, but their bodies cannot digest it, and assimilate it in the same way that the body of a man doing out-door work can.

A person cannot follow hard and fast rules, as we differ so physically, but there are certain fundamental principles which will help in directing all diets. Now we know that there are foods which can only produce heat and energy; that is they are burned up slowly in the body, keep the body warm and supply the energy for bodily movement. On the other hand our body is continually wearing away and new flesh has to be supplied, and the kind of food which can do this is limited. Then there are foods which regulate the body, keep the blood in proper condition and keep the body internally clean. Babies especially, continually get these foods in the wrong proportions. The greater part of their food is for building purposes, and if the fuel foods are given in too great quantities, we may have a fat baby, as the food may be stored as fat, but we will have a weak-boned and unhealthy baby. If proper food is given in too small quantities as the different organs develop, we have stunted growth. If an over-supply of certain foods is given, we usually have organic diseases, such as diabetes.

This ill-feeding may not show its results for years, but nature is relentless. Abuse her and the cause will have results in lessened energy or actual disease.

Between Ourselves

A Question Drawer for the Women and Girls

By GENEVIEVE

House Plans

Dear Genevieve:—

Permit me to state my appreciation of your notes and articles on house plans and house-furnishing, particularly the latest one in the December number. I should be glad if you could either publish or mail me approximate measurements of house and rooms shown in those plans; and if you were putting in a dumb waiter for conveyance of food to the cellar where would you locate it? W. F. L., Sask.

Ans.—Thanks, I have mailed you the plans with exact measurements. Should you find the house a little larger than you require, I would suggest that you throw the two smaller bedrooms into one. You will notice in the plans sent you, that I have divided the large back bedroom into two to allow for this. The ground floor plan will stand reduction just as it is. The most convenient place for the dumb waiter in this case would be in the pantry to the left of the dining room door, but you may have to change this according to where you place the furnace. I hope these plans will give you the help you want.

Making Use of Macdonald Institute Library

Dear Genevieve:—

May I ask for information regarding the Macdonald Institute Library? In preparing a paper for the Women's Institute or any subject in connection with domestic science, could I obtain a book from the library to help me, and under what conditions could I receive it?—B. L., Ont.

Ans.—If you just write to Miss Watson, Superintendent of Macdonald Institute, Guelph, naming the subject of your paper, and if this is at all indefinite, stating along what lines you want to treat it, the librarian will select from their loan stock the material you need. Except in cases where a book or folder is in constant demand you are allowed to keep it for two weeks, but it is a kindness to return it as soon as possible. This library does not include only domestic science reading, but covers a wide range of subjects of interest to the members of Women's Institutes or any person concerned with home problems and homekeeping.

Fish as Food

Dear Genevieve:—Will you be so kind as to send me some suggestions in preparing a paper on "Fish as Food" for our monthly Institute Meeting? I do not know where to get help.—Mrs. J. N., Ont.

The meat of fish is the animal food next in importance to that of birds and animals. Fish meat, with but few exceptions, is less stimulating and nourishing than meat of other animals, but is usually easier of digestion. Salmon,

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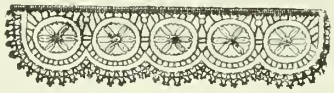

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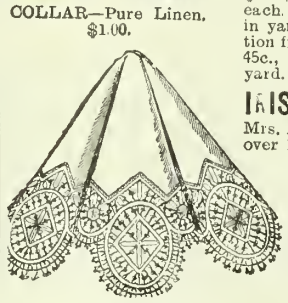

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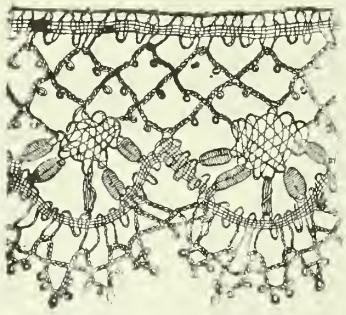

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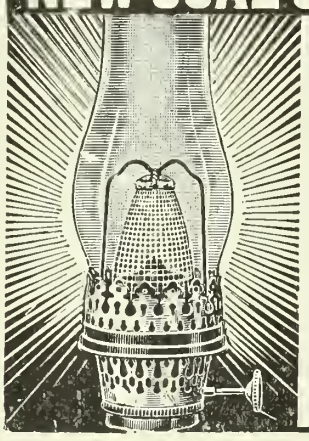

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Gives a powerful white light, burns common coal oil (kerosene), no odor, smoke or noise, simple, clean, won't explode. Guaranteed.

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will be given to the person who shows us an oil lamp equal to this Aladdin in every way (details of offer given in our circular). Would we dare make such a challenge to the world if there was the slightest doubt as to the merits of the Aladdin? We want one person in each locality to whom we can refer customers. Write quick for our 10 Day Absolutely Free Trial Proposition, Agents' Wholesale Prices, and learn how to get ONE FREE.

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to demonstrate in territory where oil lamps are in use. Experience unnecessary. Many agents average five sales a day and make $300.00 per month. One farmer cleared over $800.00 in 6 weeks. You can make money evenings and spare time. Write quick for territory and sample.

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mackerel, and eels, containing a large percentage of fats are exceptions to these rules and should not be eaten by those of weak digestion. White fish, on account of their easy digestibility are especially desirable for those of sedentary habits. Fish is not recommended for brain-workers on account of the large amount of phosphorous (an element abounding largely in nerve tissue), which it contains.

The value of fish as a source of energy depends entirely upon the amount of fat which it contains. As a source of building material, fish is somewhat inferior to lean meat, owing to the smaller amount of proteid which it contains.

I would take up the subject of buying fish. Freshness is most important, as fish begins to deteriorate as soon as it comes from the water, and in eating frozen fish you are never entirely safe from danger of ptomaines. The flesh of a fresh fish is firm, the eyes and gills bright. Scaling under water to prevent the scales flying, and how to bone a fish, should also be mentioned. After this I would discuss the different methods of cooking, which I dare say you know very well and can get an abundance of information from any good cook book.

Table Showing Composition of Various Fish

	Refuse	Proteid	Fat	Mineral matter.	Water.
Cod, fresh	52.5	8.0	.2	.6	38.7
Cod, salt, boneless	....	22.2	.3	23.1	54.4
Halibut	17.7	15.1	4.4	.9	61.9
Herring	42.6	10.9	3.9	.7	41.7
Mackerel	44.6	10.0	4.3	.9	40.4
Salmon	39.2	12.4	8.1	1.0	39.4
Trout	48.1	9.8	1.1	.6	40.4
Whitefish	53.5	10.3	3.0	.7	32.5
Oysters	6.1	1.4	1.4	.9	88.3
Aver. composition of lean beef would be	8.5	18.7	3.1	1.0	66.1

The Essentials of Farm Book-keeping

(Continued from page 24.)

paid in cash, the remainder being the dividend.

The first item in the farm gain is the increase in net worth during the year. To obtain this it will be necessary to compare the inventory of one year with that immediately preceding. It is desirable that a summary of the two inventories be placed side by side in the manner shown. Should the net worth unfortunately show a decrease, the amount of such must be added in with the value of the unpaid labor and deducted from the gross farm gain.

Besides the increase in net worth, the farmer has drawn from the profits of the business his own and his family's living expenses for the year—the total of which is given by the cash account—and has paid the interest on a mortgage; further, the farm has provided him with various supplies—the value of which is shown by the produce account—and has furnished him with a house to live in. The business must be credited with all these items, and, together, they make up the gross farm gain.

Some explanation should probably be made as to why the interest on a mortgage should be included here. It may be objected that this is a business expense, and, as such, should be charged against the business rather than counted in its favor. But we must remember to distinguish between the profit of the farm and the profit of the farmer. The point may perhaps be made clear if we regard the mortgagee as a sort of a shareholder in the business, to whom a certain proportion of the dividends must be paid. The farm has made as much profit, no matter to whom it is paid, and therefore the mortgagee's share must be included as part of the farm gain. Another way to elucidate the matter would be to consider how the statement would appear if there were no mortgage. As no interest would have to be paid, the amount of cash on hand—as shown by the 1913 inventory—and hence the net worth for that year, would be $90 greater. The item "Increase in net worth" would then be $757.28 instead of $667.28, thus balancing the omission of the item. "Interest on mortgage" and making the gross farm gain the same as before, namely $2,155.68.

The gross farm gain having been found and the value of all labor not paid in cash having been deducted therefrom, we obtain a certain sum as dividend.

The next step is to work out what percentage this bears to the capital invested, a ratio which is found by multiplying the amount of the dividend by 100, and dividing by the total of the investment at the beginning of the year, as illustrated in the example shown.

Results

The system of book-keeping above outlined, while simple, supplies some very essential information, which every farmer ought to possess about his business, namely:

(1) Amount of capital invested.
(2) Increase or decrease in capital year by year.
(3) Farm profit or loss.
(4) Personal and household expenses.
(5) Value of supplies drawn from farm for household.
(6) Labor income of farmer and family.
(7) Distribution of receipts and expenditures (if a classified cash account be kept).

A more complex system would aim at providing much additional information, such as the precise profit obtained from a particular field or group of stock or the exact cost of producing a quart of milk or a bushel of wheat.

It may be desirable to keep many records that have no direct connection with money matters, e. g. to keep account of the number of hours worked by each man and each horse, the quantity of milk produced by each cow, the number of eggs laid day by day, the date of every animal's birth, etc., etc. But all such records are beyond the scope of this article, which aims, as its title indicates, at presenting merely the essentials of farm book-keeping. It is believed that any farmer who will conduct a system of accounting according to the principles here laid down, will obtain, at the expense of a few minutes every evening and one day a year for stocktaking, a clear insight into the financial side of his business and a sound basis for comparison with other occupations.

Make Your Work Your Masterpiece

By Dr. O. S. MARDEN

Dr. Marden's talk this month makes most inspiring reading. The man who believe in his job will find a kindred spirit breathing through the lines; the man who doesn't will be set thinking. The straight shoulder hits from this writer's philosophy are appreciated by the reader who wants something worth remembering.—Editor.

As a rule, success is the triumph of common, ordinary virtues. A careful, painstaking habit is a sign of the genius that achieves. If we analyze the lives of most successful people, we find that they were not geniuses. We do not find that they had very marked ability, but that they averaged up pretty well, that they had the habit of industry, of painstaking, of doing things to a finish.

Any person of good common sense and fairly good judgment, a hard worker, thrifty, with painstaking habits, who does not botch his work, who does everything thoroughly, is almost sure of a successful career. It is the constant application of these homely qualities, the common faculties, common principles, with great industry and determination, and the habit of painstaking, not great genius or very marked ability in any particular line, that characterize the world's achievers.

Genius has been defined as "the habit of taking pains." As was long ago said, "There is no royal road to learning." The power and wealth of kings could make short cuts to every desire but learning, which can only be obtained by toil and industry.

Superficiality is a great curse in America. As a rule our youths are not as well grounded in principles, in technical training as the English or German youths are. They have nothing like their superb discipline and effective training. In these countries the youth is brought up with the idea that he must learn to do it supremely well. The typical American and Canadian youth thinks he can do most anything he turns his hand to, often without previous training.

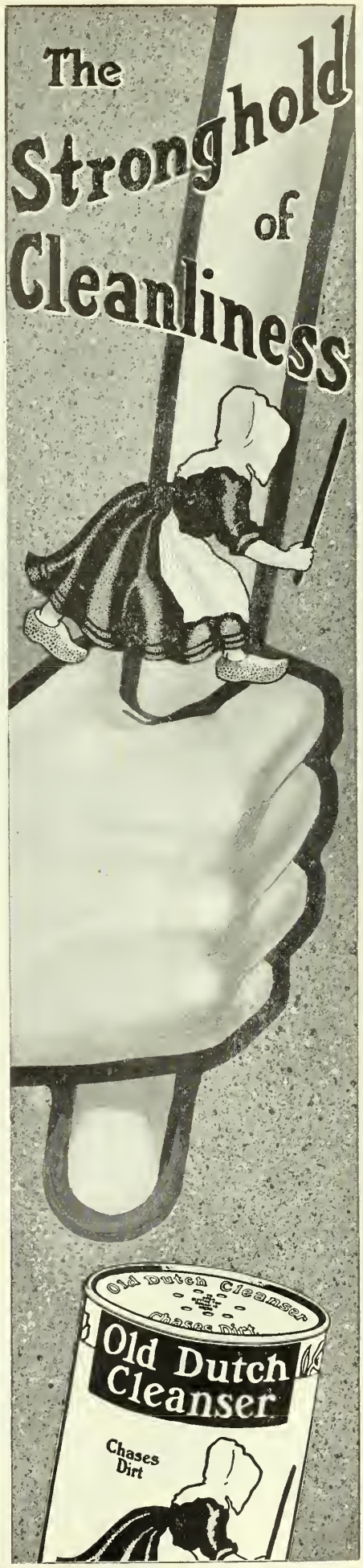
I recently clipped from one of our dailies the edvertisement of an institution that gives a diploma to boys and girls who cannot spell the words used in an ordinary letter without the dictionary. The advertiser claims that a comparatively few weeks' or months' training, day or evening, at very little cost, will equip those who take their course as bookkeepers, stenographers, etc., and will guarantee them good positions. Think of the infinite harm to efficiency, to the laying of solid life foundations, which comes from such fake institutions! What a shame thus to deceive young people and make them believe that it is unnecessary to spend years in preparation for one's lifework; that they can take infinitely shorter cuts to success, and that it is foolish to spend precious years laying foundations when all the business essentials can be learned in a few weeks.

Superficiality a Curse

Want of thoroughness is the curse of the age. Few young men ever thoroughly learn any one thing. Just as the student crams to "get through" a dreaded examination, most youths pick up their special knowledge as they go along, without very much special training. The typical young American gets a job wherever he can, whether he is particularly adapted for it or not, and watches for the "main chance." When he sees it, he goes for it, regardless of fitness or previous training. How very seldom we find young people who are willing to take time to prepare thoroughly for their life work. They get just a little education, a little smattering of books, and then imagine themselves ready and plunge into the first job that presents itself.

"Can't wait" is the characteristic written over everything. Our intelligence offices are full of people who wander about from place to place, have great difficulty in getting positions, and when they have them, can't keep them, because they never learned to do any one thing well. The result is that they become drifters from one thing to another, never becoming proficient in any one thing, never acquiring facility or efficiency.

The thorough, painstaking boys are the boys that are heard from, and usually from posts far higher up than those filled by the boys who were too "smart" or too indifferent to be thorough.



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FARMER'S MAGAZINE

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But thoroughness from the start is the only sure foundation. Everywhere we see men being crippled by their half-done things away back in their boyhood, which they never expected to hear from again, but which are constantly bobbing up to trip them.

The Botcher

Look at the desk of a man who thought it was not worth while to be exact in little things when a boy. It is loaded with papers and letters. Confusion reigns everywhere. Such a man never knows where he stands. He lacks system and thoroughness, is slovenly in his business habits. His slipshod methods are infectious. Every one who works for him catches the contagion. Nobody has confidence in the man who half-does things. The botcher cannot get credit, his notes go to protest, he misses his engagements, he can never be depended upon. What a calamity for a youth to grow to manhood and find his whole future compromised and endangered by the habit of half-doing things formed early in his boyhood. He may not have known that careless, indifferent work makes a careles, indifferent man.

Whatever the stage of your advancement, do the thing you are doing as though your whole future depended upon it. I have in mind a poor chorus girl who got an opportunity to speak two or three apparently trifling lines in a play. She made up her mind that this might be the chance of a lifetime. She studied the lines and practiced giving as much color, setting, and expression as possible to them, and when the time came, she gave the lines with so much distinction and expression that she made the hit of the evening, was at once given important parts, and is now a noted actress. So in the case of Richard Mansfield, who, in the part of Baron Chevrail, made an inferior part the attraction of the play, and leaped at once into eminence.

Many a youth has been promoted because of the quality and distinction which he gave to an apparently very unimportant piece of work. First of all, thoroughness, as the foundation of success, demands putting dignity into the countless little things that make up your daily work, thus dignifying your position, whatever it may be. It is a curious fact that most people think, because their occupations in life are humble, because they occupy no place of special importance, no office of distinction, that they are of very little account, and they get into the habit of regarding themselves as nobodies in particular. Now, every individual should look upon his calling, however humble, with the same sense of pride as he would if he were occupying a position of great distinction. Why not?

Your place in life, your vocation, is of just as much consequence to you as that of the Premier of Canada is to him. It is your sacred duty to dignify that position, to make it respected, if it has been belittled, just as Roger Sherman, Vice-President Wilson, Kitto, and many other great souls lifted out of its former con-

tempt the cobbler's trade, so that it was regarded at one time as an occupation of considerable distinction.

A great personality, a superb life's devotion, will lift any necessary occupation into dignity and respect. Insist that, whatever you do, you will stand erect; live your own life, your own creed.

It is a pitiable thing to see people apologizing to those who happen to occupy a little higher position in life for their own humble calling, and for not having been able to climb up. Why should any human being who does what is necessary, and does it like a man, feel that he should apologize for it, even to the highest officials in the land? If you do your work in a kingly manner, if you put your heart into it, if you put your trade-mark of superiority on everything that passes through your hands, the trade-mark of character, the patent of nobility, you need not apologize. In the first place, we should never do anything which is disgraceful or demoralizing to ourselves or others.

There is a great deal of false hero-worship in this country. It is demoralizing to run after those who happen to have been a little more fortunate than yourself. If you are doing the best work you are capable of under the circumstances, dignify it by doing it in a superior manner. A king may cobble on the throne, while a cobbler may do kingly work mending shoes on his bench. Many a man is still cobbling in Parliament, while mechanics and farmers in his own community may be putting the stamp of royalty upon their work. There is many a stenographer or private secretary who is really greater than the mayor or Cabinet Minister she serves. She may be putting a queenly stamp upon her work, while her employer is disgracing his job. It is doing work in a kingly fashion that makes the real king. Nobility is the child of superior quality.

The fortune you make is of little consequence in comparison with the influence you have exerted in making your fortune, the standard you have set up for your fellows. Whatever your line of work, it is a great thing to set a pace for your contemporaries, to raise the standard of your specialty so high that your name will ever be identified with elevated methods and lofty purposes.

It is a dangerous time in a youth's life when he first allows himself to half do a thing. There is a certain loss of self-respect for which he can never quite forgive himself. He is never quite the same man again after doing a botched job. Something of quality has gone out of him, a lowering of the ideal has taken place which will tend to degrade his work later in life.

There are thousands of patents and devices in the Patent Office at Washington which are absolutely useless because the inventor or discoverer did not think out his idea to the finish, did not carry his device quite far enough to make it practical. Much of Edison's fortune and reputation have come from picking up these dropped threads, these half-carried-out ideas, of these all but successful

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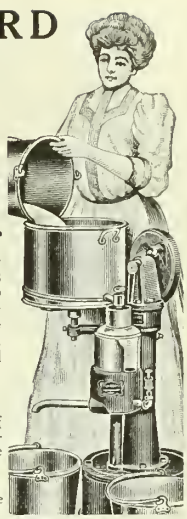

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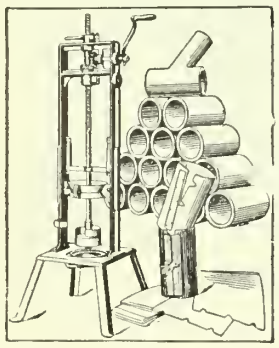

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inventors, and continuing them, completing, developing to final perfection what these "almost" inventors had begun and dropped.

Don't Fall Down

There are a thousand persons who can start a thing with great enthusiasm to one who can carry it to completion. The majority of people fall down before they reach their goal, stop this side of their laurels, because they never learned the habit of perfecting what they undertake. The ideal of perfection must be held high and kept clear and clean. The standard of thoroughness must be kept up, or the general conduct of life will drop.

The very reputation of being a high-class man is everything, the reputation of regarding the quality of your work as your trade-mark, and of being very jealous of the quality of your services; the reputation of being ambitious to carry everything you touch to completion, will not only give you an infinite satisfaction later in life and will save you from thousands of temptations to cheat yourself and sell yourself, but it will also be the greatest possible factor in your advancement, your promotion.

I once heard of a laborer who was leaning over his hoe when it was nearly time to quit work, and when asked what he was doing, said he was waiting for the whistle to blow, so that he could quit. I have never known a man who made it a rule to wait for the whistle to amount to much. Everywhere we see people waiting for the whistle to blow, and as a rule they remain perpetual clerks, perpetual day laborers.

Whatever your vocation, resolve that you will be a man of quality, that you will have nothing about you which is second-class, inferior, cheap; that you will have nothing to do with shoddy and shams, that you will have nothing to do with inferiority, because it will contaminate your ideals. Make it a rule to set the pace for those about you. Show them by your manner, your dress, that you have nothing to do with cheapness and commonness. Just make up your mind at the very outset that your work is going to stand for quality, that you will let others slight their jobs, and do slipshod, slovenly work if they will, but that you are going to stamp a superior quality upon everything that goes out of your hands, that whatever you do shall bear the hall-mark of excellence. Let others work for quantity if they will, let quality be your motto, so that everything that your name is associated with shall suggest excellence, the best that can be done or can be made.

Your Trade-mark

Stamp the trade-mark, thoroughness, individuality, distinctiveness, upon everything you touch. Then you will be a marked man, your services will be in great demand, and you will have the satisfaction of constantly hearing the "Well done!" of that still small voice within you.

Accustoming oneself to the second-best is fatal to all existence, just as

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familiarity with inferiority, with slipshod, easy-going methods, is fatal to the building up of habits of system and order. Learn to be particular with yourself, exacting as to the quality of your work. Never accept from yourself inferior work. If you do, every time you attempt to slight your task, slovenliness will grow easier and easier. The habit of doing one's best and never accepting anything else, is a character-builder, it buttresses and sustains and supports the whole man. The habit of forcing oneself up to standard is a most important one.

All slipshod, slovenly work is lying. Many people who tell the truth with their tongues lie with their service, lie in poor work, bad work. Lies in half-done jobs are often worse than lying with one's tongue, because their indifference and carelessness may cost precious lives or limbs. Many a railroad accident, many a disaster on the water, have been caused by careless workmen away back in the machine shop.

Imperfect material, defective bolts, bubbles in steel rails, iron columns, or beams, caused by careless workmen in he foundry, have caused many fatal accidents. Multitudes of people have been permanently maimed or have lost their lives by the half-done job or botched work.

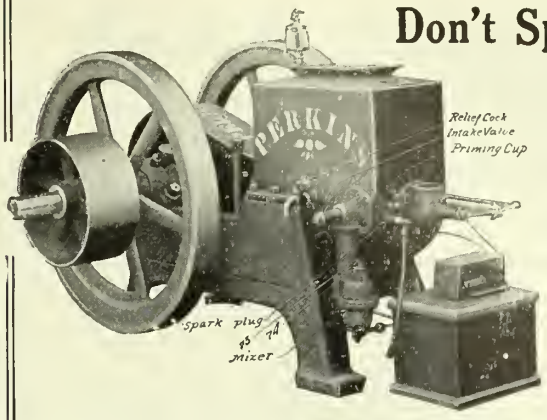
The dangers of carelessness cannot be overemphasized. Just a little indifference or carelessness, just a few bubbles in a casting, and a whole building is wrecked or a bridge goes down into the river, carrying in its train precious human freight.

Yet everywhere we see evidences of carelessness and shirking.

One of the most insidious ideas that ever deluded any mortal is the thought that he will get more time later to do the things which he is slighting at the moment. The habit of doing things temporarily, just for now, with the expectation of taking them up later and doing them better, is a great demoralizer of character. It ruins one's system to have a lot of fag-ends, tail-ends, half-done things around one. It violates every sense of fitness of things, of wholeness.

The mind is constructed on lines of perfection. It loves wholeness, completeness, and the faculties protest against any half-done or botched work. The intensity of this protest is always in proportion to the distance from the first offence. First impressions are always the strongest, and the mind becomes used to the conditions in its environment and gradually protests with less and less intensity. The adjusting power of the mind counteracts the exacting demand of the normal mind. To leave a thing half-done, to postpone perfecting it, is a most dangerous entering wedge for inferiority. One must be very exacting with his mental processes in order to keep his brain machinery up to the standard.

I know young men who are always telling how other people's success and ability are due to a mysterious luck or to unusual qualities. They seem to think fortune unjust. Why should not the fates deal as kindly with them? Yet



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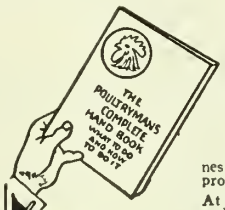

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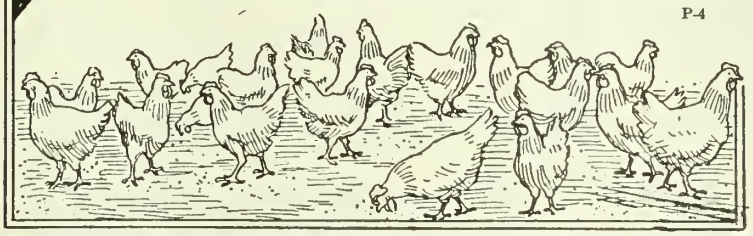

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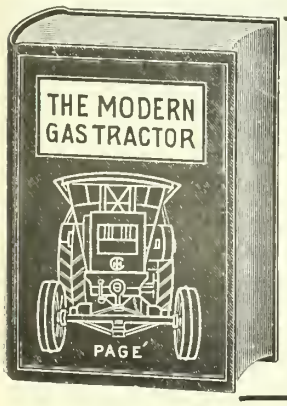

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they would not, probably, in ten months, keep up their work to the standard of one day's work of the men of whom they speak. If they would only watch for a single day the men they envy, they would learn the secret of the great difference between their stations in life.

For years I marveled at the wonderful success of a friend of mine. When I left school, I was ahead, and I could not understand why he got along in the business world so much faster than I. But I soon found that he made it an inflexible rule, never to allow anything to go through his hands that was not done just as well as he knew how to do it. No matter how hurried, he would not dictate a slipshod, slovenly letter. He would not scrawl or scribble an address on an envelope. Everything had to be done just so. His business associates called him "the Tartar" and laughed at his exactitude in everything. They thought it a foolish waste of time. It did not occur to them that doing things with such severe exactitude, bore any particular relation to getting on in life. But they soon saw that this man went ahead by leaps and bounds, while they were perpetual employees. It was just the difference in the way they did things. The man whose position they envied had a high ideal and he lived up to it. He was always prodding himself to do his best, while those under him were content to do their second best.

The whole life grows when we are striving for excellence; but when we are slovenly in our mental habits, and slipshod in our work, there is a downward tendency in our lives. There is something in the constant struggle to attain the ideal which makes for our own betterment. When we are trying with all our might to do our level best we are improving all along the lines of our natures.

Refuse to work for a man who wants you to slight your work, or to do poor work because the price he gets as the result of your labor will not warrant thorough work. Tell him you cannot work unless you can put the trade-mark of your manhood, of superiority, the stamp of your integrity, upon everything you do. Give him to understand that no amount of salary would compensate you for the loss of self-respect, that you cannot cheat yourself for salary or cheapen your work for any consideration. Let your employer understand that the way you do your work is your capital, that the quality of success means everything to you. He should know that moreover the quality of your work affects the quality of his business. Inferiority taints everything it touches. The public unconsciously carries the image of the quality of his establishment in its mind. It is made up of impressions received from the courtesy or the rudeness of the employees, from the quality and style of the merchandise, from the order and system or the slovenliness of the establishment. And only with the closest cooperation for excellence, down to the least details, between employer and employee, can the establishment have a name for consistent superiority.

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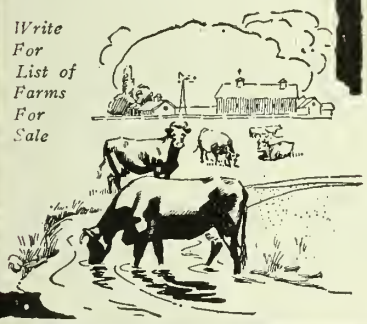

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Good Roads in Canada

(Continued from page 20.)

bridges and culverts; (4) The appointment of expert highway engineers and road supervisors, the letting of contracts and the employment of workers without political preferment; (5) Equalized taxation so that every foot of land whether in town or country will with its occupant pay a just share of the cost of road construction and maintenance; (6) Permanently constructed roads on the chief thoroughfares leading to the market towns; (7) Properly drained and graded roads with the intelligent use of the split-log drag on earth and gravel for the highways tributary to the main roads; and (8) the planting of trees and the general beautification of the roadsides under a systematic plan with ample supervision.

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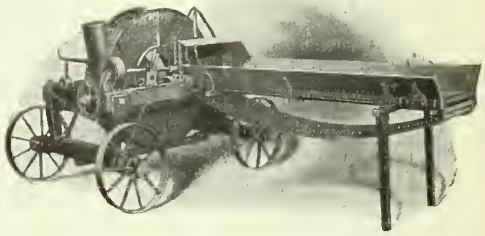

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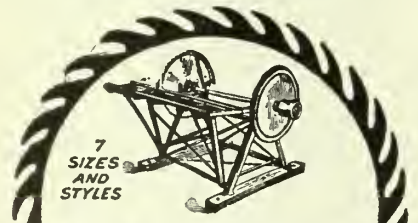

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Spanish Gold

(Continued from page 32.)

tell you that the really important thing is to get the natives to trust you thoroughly from the start."

"That's why you told that yarn about the sea insect, I suppose?"

"Look here, Major, what's the good of rubbing it in about the Athalonia miserabilis? I've owned up that that was a slip. I can't do more, can I? I don't keep harping on to you about the way you put my sock into the pool and forgot the crab, and those are a jolly sight worse things than any I've done."

"I wouldn't care much," said the Major, as they neared the top of the steep and slippery pathway, "to be climbing up this five or six times a day with a creel of seaweed on my back."

"No more would I," said the curate. "Seaweed's poor stuff, but I wouldn't mind doing it that number of times and more with a parcel of doubloons slung over my shoulder; gold, Major, good solid gold. It's this way that we'll have to bring it up from that hole. I've been reckoning out how many journeys we'll have to make with it. Supposing, now, that there's——"

"Do shut up, J. J.! What on earth's the use of talking like that? You know as well as I do that there's not the smallest likelihood of our getting any gold out of your hole."

"Oh, I'll shut up if you like. But I'll just say this: it's a good job for you, Major, that you have a man with you who has a little foresight, who figures things out beforehand and lays his plans in advance. You'd be particularly helpless if you were left to yourself."

They reached the top of the cliff. In front of them lay the long, green slope of the island, a patchwork of ridiculous little fields seamed with an intolerable complexity of grey stone walls. Below, near the further sea, were the cabins of the people, little white-washed buildings, thatched with half-rotten straw. On the roof of many of them long grass grew. From a chimney here and there a thin column of smoke was blown eastwards and vanished in the clear air a few yards from the hole from which it emerged. Gaunt cattle, dejected creatures, stood here and there idle, as if the task of seeking for grass long enough to lick up had grown too hard for them. In this muddy bohireens long, lean sows, creatures more like hounds of some grotesque antique breed than modern domestic swine, roamed and rooted. Now and then a woman emerged from a door with a pot or dish in her hands, and fowls, fearfully excited, gathered from the dung-heaps to her petticoats. Men, leaning heavily on their loys, or digging sullenly and slowly, were casting earth upon the wide potato ridges. Apart from the other habitations stood Higginbotham's egregious iron hut, the very type of a hideous, utilitarian, utterly self-sufficient civilization thrust in upon a picturesque dilipidation. It gave to the island an air of half-comic vulgarity, much such an air as Thomas O'Flaherty Pat might have worn if some

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one had added to his customary garments a new silk hat. Beyond all lay the bay, round which the island folded its arms, a sheet of glancing, glittering water with darker sea behind it, and far away the dim outline of the mainland coast.

The Spindrift lay at her moorings, and beyond her another boat, cutter rigged also, which had just dropped anchor. Her jib was stowed; her mainsail shook in the breeze. Two men were to be seen casting loose the halyards. Soon the sail was down, and the men were gathering the folds of it in their hands and lashing the gaff to the boom. Major Kent and Meldon stared at the boat in surprise. For a time neither of them spoke. Then, taking his companion by the arm, the Major said—

"What boat's that?"

"She looks to me," said Meldon, "uncommonly like my old Aureole."

"I just thought she did. Now what brings her here?"

"I don't know."

"Look here, J. J., you go in for being clever; you've been swaggering all day about the way you understand everything and get the hang of whatever happens, even if it's two hundred years ago; just set your great mind to work on that boat and tell me what she's doing out there."

Stirred by the taunt, Meldon spoke with some appearance of recovering self-confidence.

"It's the Aureole right enough. I hired her to a man in a mangy fur coat, who said he didn't know anything about boats but had a friend who did. Now I'll tell you this, Major, to start with. Either that friend knows nothing about boats either, or else he has some pretty strong reason for wishing to get to this island. Nobody but a fool, or a man who was prepared to take big risks, would have ventured out here in her. Why, every rope in her rigging is as rotten as a bad banana. If there'd come on the least bit of a blow that fellow in the fur coat and the other play boy, whoever he is, would have been at the bottom of the briny sea."

"Well, they're not," said the Major, "so their deaths are not on your conscience."

"They wouldn't have been in any case," said Meldon. "I never thought they'd go outside Moy Bay, or I wouldn't have hired the boat to them. Who'd expect a seedy individual in a fur coat, a fellow that looked sodden with drink, to take a boat out on the broad Atlantic? At the same time the other fellow can't be altogether a fool. He must know something about sailing, otherwise he wouldn't have fetched up here at all. Now, what on earth brings him out here?"

"Maybe he's a tourist looking for scenery."

"He is not, then. There isn't any scenery here, not what tourists call scenery. And there's not a guide-book in the world that so much as mentions Inishgowlan. The place isn't even marked out on most maps. Whatever else he is, he's not a tourist."

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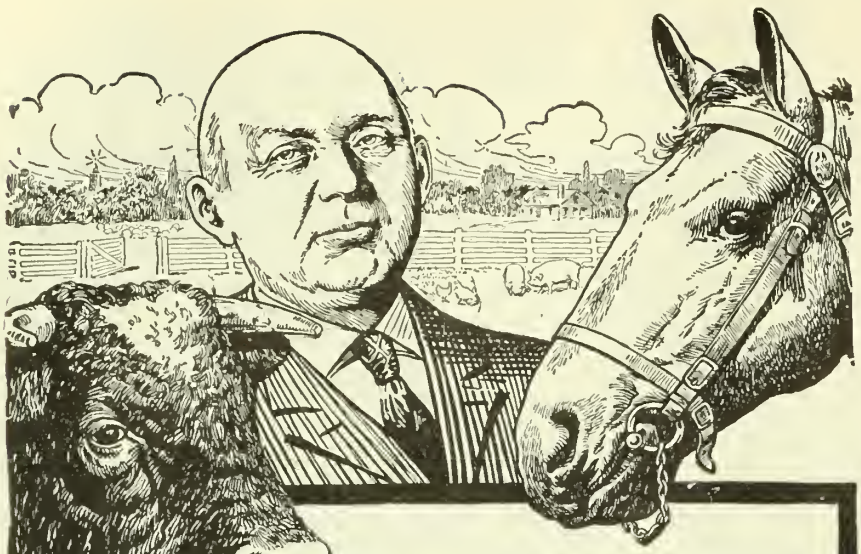
Nitrate of Soda

for your active Nitrogen and save freight bills.

The greater productive capacity of high-grade fertilizers without so much filler means a greater outbound tonnage for railroads and greater purchasing power for farmers, so that railroads and everybody would be benefited.

DR. WM. S. MYERS, Chilean Nitrate Propaganda

NO BRANCH OFFICES 25 Madison Ave., New York



I'll Put Your Stock in a Thriving Condition—Make the Ailing One Healthy and Expel the Worms — *GILBERT HESS* { *Dr. of Veterinary Science* / *Dr. of Medicine*

I urge you to see to it right now that your work horses are put in prime condition for spring and summer work, so that when the sun shines they will be rid of their old coat, full of stamina and ready for business. And don't overlook the spring pig crop—the mortgage lifters. Start them off free from disease—free from worms. Be sure, also, that your milk cows are thoroughly conditioned for the long, heavy milking season, and that those with calf are vigorous and fit. Remember, your stock have been idle and on dry feed for the last few months—they're pretty liable to be out of fix—rough in the hair, constipated, troubled with dropsical swellings and stocky legs, but the most common ailment of all, especially among hogs, is worms—worms.

Dr. Hess Stock Tonic

A Splendid Conditioner **A Sure Worm Expeller**

It will tone up your stock, enrich their blood and help to put them in shape for spring. Being both a doctor of medicine and a veterinary scientist, I formulated Dr. Hess Stock Tonic especially as a conditi ner. It contains tonics for toning up the general system, laxatives for regulating the bowels, diuretics to remove dropsical swellings and vermifuges that expel the worms. By all means feed Dr. Hess Stock Tonic to your hogs now—it will positively rid them of worms. Feed it to your cows also.

So sure am I that Dr. Hess Stock Tonic will condition your stock, aid their digestion and expel worms that I have authorized your dealer to supply you with all you need, and if it does not absolutely do everything I claim, return the empty packages and get your money back.

Sold only by reliable dealers *whom you* know—I save you peddler's salary and wagon and team expenses, as these prices show: 25-lb. pail $2.25; 100-lb. sack $7.00. Smaller packages in proportion (duty paid). Write for my new stock book—it's a stunner and it's free.

If not at your dealer's, write direct to

DR. HESS & CLARK, Ashland, Ohio

Dr. Hess Poultry Pan-a-ce-a

A splendid tonic for young chicks. Puts stamina into them—prevents leg weakness, gapes, cholera, etc. It tones up the dormant egg organs and makes hens lay. It also shortens the moulting period and promotes rapid feather growth. Very economical—a penny's worth is enough for 30 fowl per day. Sold only by reliable dealers—never sold by peddlers. 1½ lbs. 35c; 5 lbs. 85c; 25-lb. pail $3.50 (duty paid). Guaranteed.

Dr. Hess Instant Louse Killer

Kills lice on poultry and all farm stock. Dust the hens and chicks with it, sprinkle it on the roosts, in the cracks, or, if kept in the dust bath, the hens will distribute it. Also destroys bugs on cucumber, squash and melon vines, cabbage worms, etc., slugs on rose bushes, etc. Comes in handy sifting-top cans. 1 lb. 25c; 3 lbs. 85c (duty paid). I guarantee it.

"He might," said Meldon. "And yet I don't think he is. It's quite true that a journalist might come to see Higginbotham. Higginbotham is the sort of man a journalist would fasten on at once. A really smart man at his trade would scent Higginbotham from miles and miles away, and would track him over land and sea. Higginbotham would talk all day long if he got any encouragement. He'd pour out just the sort of sentimental rot about improving the conditions of the people's life that the plump, kind-hearted Englishman loves to read. There's a good deal to be said for that journalist hypothesis of yours, Major, but there are serious objections to it too."

Major Kent did not answer; he was not really much interested in the strangers. Meldon went on—

"In the first place, if he was a journalist, or if he was any kind of inspector, the Congested Districts Board would bring him round in their own steamer. They always take care to do a journalist middling well when they catch him, and they keep their eye on him. They don't let him off by himself in a boat to pry into all sorts of things which he has no business to see. That's one objection The second is this: if he is a journalist, who is the other chappie, the one in the fur coat? Journalists never go about in couples. It would ruin their business if they did. No, on the whole I think we may decide that he's not a journalist. There's only one other thing he can be—a Member of Parliament, one of the conscientious, inquiring kind, who wants to look into the condition of Ireland for himself before he commits himself to an opinion on Home Rule."

"I hope," said the Major anxiously, "that his coming won't make it necessary for you to tell any more—I mean to say adopt any more disguises."

"I expect I shall have to."

"Well, now, J. J., like a good fellow, draw it mild this time. Remember, if he's a Member of Parliament he'll see through the ordinary disguise at once."

"That's just it," said Meldon gloomily. "If he's an M.P. he's sure to have made inquiries about our educational system and he'll never believe that story about the National Board wanting to build a school."

"He certainly won't believe about my geological survey."

"You mean on account of the pliocene clay? I don't expect he knows much about clay—not enough to make him sceptical, anyhow."

"I wasn't thinking of the pliocene clay. What I had in my mind was the inherent absurdity of the whole story."

"I don't see that at all," said Meldon. "On the contrary, I'm inclined to think that he will believe that story. Anyhow, he'll ask a question in the House of Commons about it."

"I hope to God he won't! I should look a nice fool if that story ever got into the papers."

"You'd do worse than look a fool. You'd probably be called to the bar of the house, or be sent to jail for contempt of the Chief Secretary. I'll tell you what it is, Major, if that M.P. gets hold

Talking to the Point—

CLASSIFIED WANT ADS. get right down to the point at issue. If you want something, say so in a few well-chosen words. Readers like that sort of straight-from-the-shoulder-talk, and that is the reason why condensed ads. are so productive of the best kind of results.

CLASSIFIED WANT ADS. are always noticed. They are read by wide-awake, intelligent dealers, who are on the lookout for favorable opportunities to fill their requirements.

TRY A CONDENSED AD. IN THIS PAPER.

of the story you'd better sail straight to America.''

''But it's not my story, it's yours.''

''It's you they'd prosecute, though. That's the beauty of Ireland. The clergy are perfectly safe. Even the Chief Secretray daren't proceed against me; but he would against you, like a shot. He might set a Royal Commission on you.''

''Don't be an ass, J. J.''

''I'm not being an ass. I'm looking facts straight in the face and drawing conclusions. It's my opinion that if that man in my boat turns out to be a Member of Parliament—I say if—we shall have to adopt some fresh disguise.''

''I can't stand another, J.J. I can't be four things at once. My brain won't stand it.''

''It'll have to.''

''What do you mean to tell him?''

''I don't know yet. I must be guided by circumstances. But you leave it to me, Major, and you'll find it'll pan out all right. I'm not by any means such a fool as people are inclined to take me for. After all, what's a Member of Parliament?''

The Major's spirits sank as Meldon's revived. He was a plain man with an immense dislike of complications, and he foresaw bewildering confusion before him.

''J. J.,'' he said solemnly, ''I'm Major Kent, I'm also a mining expert in the pay of the Lord-Lieutenant and the Chief Secretary. I'm also a professor of sea-serpents and things of that sort. I can't and won't set up to be anything else on this trip.''

''Oh, we're done with the sea-serpent. You can get that off your mind as soon as you like. That was only temporary. Remember, Major, what Shakespeare said, or if it wasn't Shakespeare it was some one else—'One man in his time plays many parts.' You're a man, aren't you? Well, there you are. You can't go behind Shakespeare in a matter of this kind. As soon as we've had a bite to eat I'll paddle across to the Aureole and call on the Member of Parliament.''

''You will not,'' said the Major. ''What's the use of running unnecessary risks? You leave him alone unless he goes for you in any way.''

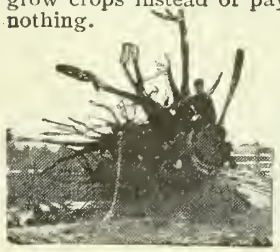
''That's the very worst possible policy to pursue,'' said Meldon. ''He'll be off to collogue with Higginbotham straight away if I don't stop him; and it's ten to one he'll hear about the school or the geological survey. No, no. I'll take him in hand. If necessary, I'll trot him round myself. How would it be now, if I dropped a hint that we were members of the Irish Lights Commission going about inspecting light-houses? He might believe that, and it wouldn't interest him enough to set him asking more questions.''

''But there's no lighthouse here.'

''That's true, of course. Still, we might be thinking of building one. But anyhow, it's time enough to think about that. I can't possibly tell what the best thing to say is till I see the man. In the meanwhile let's go and get our dinner.

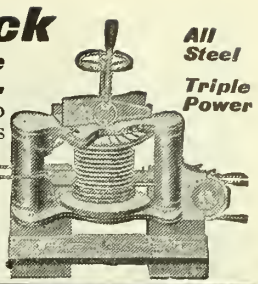
Pull Big Stumps Quick and Easy **$1280 from 40 acres the first year stumps are out.**

Pulls an acre a day. It doubles land values. Enables you to grow crops instead of paying taxes on land that yields nothing.



HERCULES Stump Puller

More power than a tractor. 60 per cent lighter, 400 per cent stronger han cast iron puller. 30 days' free trial. 3-year guarantee to replace, free, all castings that break from any cause whatever. Double safety ratchets insure safety to men and team. Accurate turning means light draft. Mail postal for free book showing photos and letters from owners. Tells how to turn stump land into big money. Special introductory price proposition will interest you. Write now.
HERCULES MFG. CO., 1132—22nd St.
Centerville, Iowa



From Michigan

Build a Better Silo and Save Money

BUILD the kind that will keep your ensilage always at its best. Build the kind of silo that does not have to be repaired or painted every other year. Your dairy herd will show its appreciation in the additional quantity of milk it gives. The *best* silo, by keeping ensilage perfect, increases output and soon pays for itself.

A Concrete Silo

is the dairyman's surest dividend payer. It keeps ensilage in just the right condition and does not permit it to dry out or get mouldy. A concrete silo cannot leak, rot, rust or dry out. It has no hoops to replace. Requires no paint and needs no repairs during an ordinary lifetime.

Send to-day for this free book "What the Farmer Can do With Concrete." It tells how to build a concrete silo and many other things on the farm that will save you many dollars.

Farmers' Information Bureau

Canada Cement Company Limited

739 Herald Building, Montreal

PEERLESS-PERFECTION

THE FENCE THAT'S STRONG--YET SPRINGY AS A BED SPRING!

Animals can't break through it no matter how hard their attacks. It simply can't be broken. Just springs back in shape like a bed spring. It's made of heavy Open Hearth steel galvanized wire with all the impurities taken out and all the strength and toughness left in. Will not corrode or rust. Top and bottom wires are extra heavy. Will not sag. Requires less posts than ordinary fence. Absolutely guaranteed.

Here's Proof of Our Statements

Read These Letters

Gentlemen:—I have handled your fence for four years and find it a good, strong, durable fence, and that the galvanizing is first-class. In referring to this I have a fence that I put on four years ago across a gully and the water is as high as the second wire and it is not rusted nor broken yet. I had a team of heavy horses that ran into your fence last summer and did not break or damage it in the least, and I am glad to say that in the four years I have handled your wire I have had no complaints about it. I remain,

Yours truly,
Bowesville, Ont. DAVID CUMMINGS

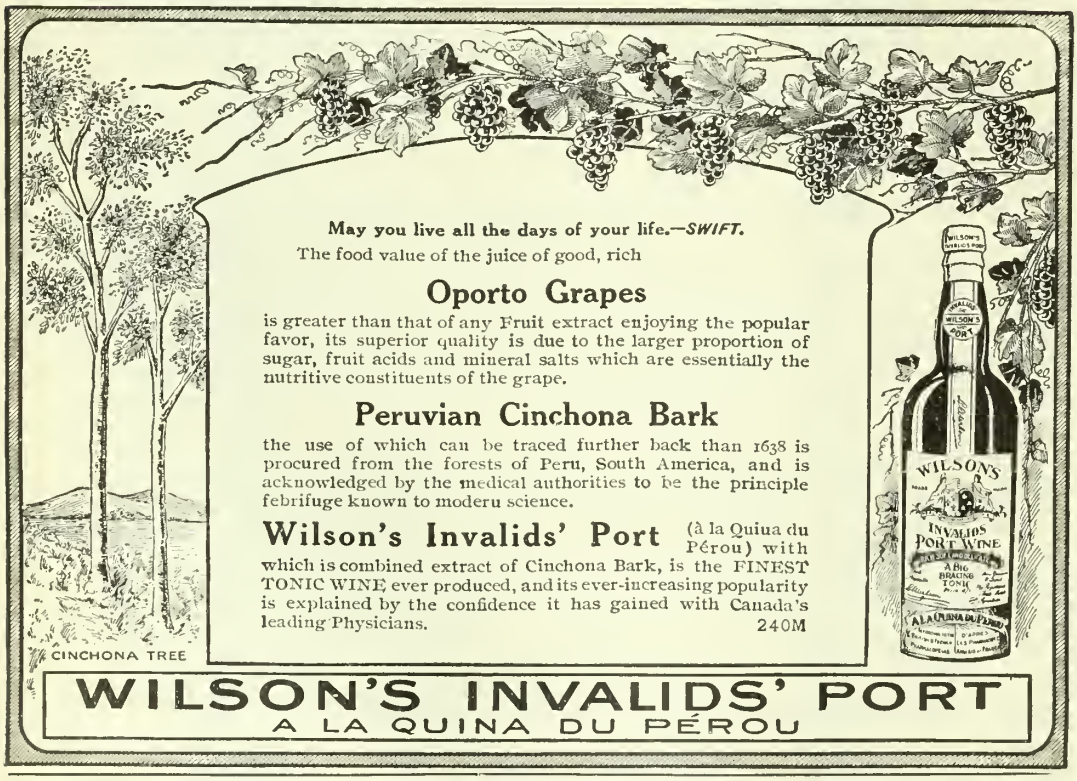
Gentlemen:—About four years ago a fence was put up of your make on one side of a road and I may say today it is just as good as ever it was. Now on the other side of the road is a fence put up at the same time, but not yours; it looked nice at the first, but today you would not know that fence or think it the same. It is both breaking down and rusted. This is just to show that your fence is the best and will wear and I think credit should be placed where it is due.

Yours truly,
Madford, Man. W. MADDER

These are but a few of the strong testimonial letters we have received from our thousands of satisfied customers. Maybe we have some from your vicinity. Ask us for them. We also make poultry fence, farm gates and ornamental gates. Remember our products are all absolutely guaranteed.

Send for catalog today. Agencies nearly everywhere. Agents wanted in open territory.

BANWELL-HOXIE WIRE FENCE CO., Ltd.,
Winnipeg, Man., Hamilton, Ont.



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The MacLean Publishing Co., Limited
143-149 University Avenue - - Toronto

I was hungry before; I'm simply ravenous now."

"My appetite is pretty well gone," said the Major.

"Rot! What is there to affect your appetite? Why, man, we're getting on swimmingly, far better than I expected. You can't go out treasure-seeking without meeting an occasional difficulty. That's where the sport comes in. And listen to me, Major, it doesn't in the least matter what I tell the Member of Parliament or what he hears from Higginbotham. The old Aureole is absolutely certain to drown him on his way home, and anything he happens to have learned will go to the bottom of the sea with him. It's nothing short of a miracle that he got here safe."

CHAPTER VIII.

Having paddled the Major out to the Spindrift, Meldon suggested that they should dine on tinned brawn and bread-and-butter. It would, as he pointed out, take a long time to light the galley stove and boil potatoes, and every moment was of value now that the strangers on the Aureole had arrived and might go on shore to interview Higginbotham. It is likely also that extreme hunger made the prospect of an hour's delay very unpleasant. The Major, in spite of the anxiety which affected his appetite, agreed to dine at once. A tin was opened and a loaf of bread taken from the locker.

"Last loaf but one," said the Major, as he set it on the table. "To-morrow we shall be reduced to biscuits."

"Not at all," said Meldon. "I'll make a point of seeing Mary Kate's mother this evening and getting her to make us a loaf of soda bread. There's nothing so good as one of those pot-oven loaves, baked over a turf fire, and Mary Kates mother is just the woman to do it well."

"You know nothing about the woman. You've never seen her. How do you know whether she can bake or not?"

"I've seen Mary Kate, and that's enough. You're very unobservant, Major. It's a great fault in you. And when by any chance you do observe anything, you fail to draw the most obvious inference. Now I know all about Mary Kate's mother by looking at Mary Kate. She's a plump, well-nourished little girl, comparatively clean, with a nice, comfortable, red petticoat on her, therefore—observe the simple nature of the inference—therefore Mary Kate's mother is a competent woman. Is it likely that a woman who couldn't bake an ordinary loaf would have reared a child like Mary Kate?"

"She may not have a mother at all," said the Major. "It might be her grandmother or her aunt that reared her."

"There you are again. That's your wretched, niggling, Anglo-Saxon way of grubbing about at details instead of grasping the broad principles of things. It doesn't matter to us whether Mary Kate has a mother or not. The point is that somewhere behind Mary Kate there's a competent woman, a grand-

mother, or an aunt, or a deceased wife's sister—it doesn't in the least matter which. Whoever she is she can bake. But I'll tell you what it is, Major, if we had my little girl here on board, we shouldn't be going on our bended knees to strange women for the want of a bit of bread. We'd be sitting down now to a good dish of steaming hot potatoes, with their skins just beginning to peel off them. In fact, I shouldn't wonder if she had them fried for us. Think of that!"

"I'd rather——"

The Major's remark was interrupted by a heavy bump on the side of the yacht. It was clear from the sound of scraping that followed that a boat had come alongside.

"That fellow, whoever he is," said the Major, "will have all the paint off us before he's done."

"It must be the Member of Parliament off the Aureole," said Meldon. "I call this most fortunate."

He sprang up and climbed on deck. The moment afterwards he thrust his head into the cabin again and said—

"It's not the Member of Parliament after all. It's only Higginbotham."

He plunged forward as he spoke until his body hung down the ladder.

"Best thing that could have happened," he whispered. "So long as Higginbotham is here we are safe, and the Member of Parliament can't get at him. I'll bring him down and give him a bit of brawn. We can open another tin if he seems hungry."

With a violent wriggle Meldon got his head and shoulders on deck again. He welcomed Higginbotham with effusive hospitality, and warmly invited him to go below and have some dinner. It appeared, however, that Higginbotham was not hungry. His face wore a look of perplexity and irritation. There was evidently something troubling him which he was anxious to have cleared up.

"I saw you leave the shore," he said, "and I got young Jamesy O'Flaherty to put me off. I hope you don't mind?"

"Not a bit," said Meldon. "We're delighted to see you. You say you won't have any brawn. Well, try a slice of bread-and-jam. Major, get out the strawberry jam; it's in the locker under you."

"No, thanks. The fact is I only came out for a few minutes' conversation with you. I——"

"If you like," said Meldon, "I'll light the galley fire and make you a cup of tea."

"No, thanks. I want to speak to you for a few minutes and then I'll go back to my work. I've been rather annoyed this morning. I'm sure there's some ridiculous mistake which can be cleared up in ten minutes. I thought it better to come straight to you."

"Quite right," said Meldon; "if the thing is clearable at all, I'll clear it. I'm rather good at clearing things up. Ask the Major if I'm not. Just you make a clean breast of whatever the trouble is. You won't mind our eating while you talk."

(To be continued.)

The Royal Bank of Canada

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Capital Authorized - - -	$ 25,000,000
Capital Paid Up - - -	11,560,000
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325 Branches throughout Canada.

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A Word to the *Wives* is Sufficient

You doubtless know of cases where old Father Time, grim and stealthy, has entered homes, and with his ruthless scythe cut down husband and father. Suppose he should enter **your** home? Would your maintenance be assured, and the future of your children provided for? Would it? If not, then have it guaranteed by

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Special Rates for Total Abstainers.

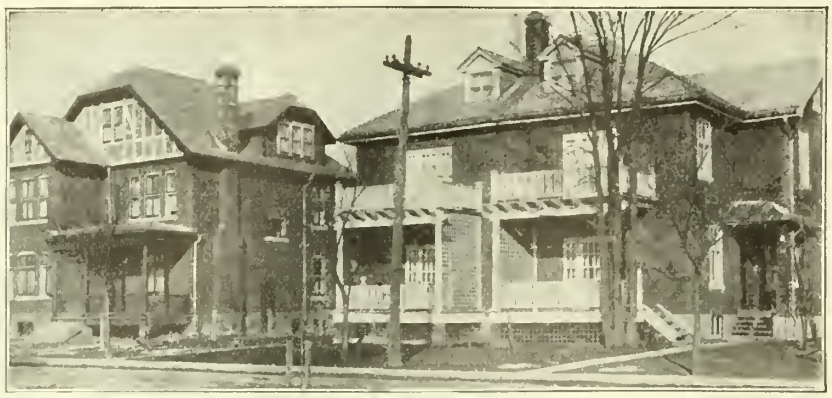
The "BAYARD" Semi-Automatic Rifle

THE "BAYARD" AUTO-COCKING AND EJECTING SEMI-AUTOMATIC RIFLE. 22 CAL. YOU PULL THE TRIGGER, THE BAYARD DOES THE REST.

Weight 3¾ lbs. Price $8.00 Each.
50 Cartridges Free.

The Bayard is positively the best 22 calibre rifle for your home; safe, sure and accurate. When you shoot the cartridge the recoil cocks the gun and throws out the empty shell, leaving it ready for the next shot. The rifle can be taken apart in less than two minutes for cleaning, oiling, etc. All parts are interchangeable. An easily adjusted Safety Catch permits the rifle to be locked when loaded. The Barrel is fitted with an adjustable target rear sight. Owing to its long range and the great accuracy, the Bayard Rifle recommends itself for target practice and small game shooting. Length over all 38½ inches. Length of Barrel, 19 inches. Weight, 3¾ lbs. Write for descriptive booklet. Sent, express charges paid, to your nearest express office on receipt of price, including Fifty Cartridges with each Rifle.

McGILL CUTLERY CO., Reg'd., P.O. Box 580, MONTREAL, CANADA



A Typical View in Montreal West, P.Q.

"THE TOWN OF ASBESTOSLATE"

Montreal West is the Garden Suburb of Montreal, and, as you can see from the type of houses illustrated above, it is as substantial as it is charming.

The most noticeable feature of the town is the number of **ASBESTOSLATE** Roofs, in their soft, attractive greys, reds and blue-blacks. Asbestoslate conforms to the Building By-laws requiring fireproof construction, is reasonable in price, and absolutely weatherproof and permanent.

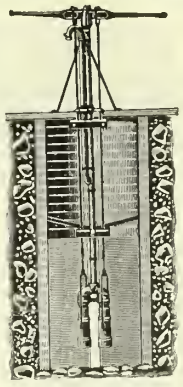
For this reason nearly every house erected in Montreal West during the past two or three years has a roof of Asbestoslate—and it is doubtful if any other town of its size in Canada is so well and handsomely roofed.

We are preparing a worth-while Booklet on "The Town of Asbestoslate." Write for it to Dept. F.

ASBESTOS MANUFACTURING CO., LIMITED

Address E.T. Bank Bldg., 263 St. James Street, Montreal. Factory at Lachine, P.Q. (near Montreal)

Six mighty good reasons showing why it pays Farmers to use the Aylmer double-cylinder, double-acting force pump.



FIRST—There is no packing-box to cause friction and leakage, thereby stopping the force of the water.

SECOND—There are two cylinders instead of one, which causes a steady solid forced stream, and thereby a much larger quantity of water.

THIRD—The water does not settle back on the valves between strokes, being constantly in motion, and by the use of cocks the water can be delivered at different points from the same pump.

FOURTH—By having a vent four feet below the platform so as to let the water out of the stand, and by placing the cylinders almost at the bottom of the well, on opposite sides of the pipe, they are perfectly balanced, and are always primed and a positive anti-freezing pump.

FIFTH—By attaching a windmill to one cylinder, the other one is free to be worked by hand without detaching the mill, thereby giving the advantage of two single or one double acting pump, as the cylinders are independent of each other.

SIXTH—With one of these pumps in your well or cistern, you have a home fire engine, as they can be made ready in one minute by a simple attachment for connecting a hose, to throw a continuous stream of water.

The working rods can be shifted on the handle to suit the strength of the party operating pump, so that women or children can easily work them, and the rods being outside, the full capacity of the pipe is secured. The handles are well set up so that the natural bend of the elbow gives all the stroke required and they are without doubt the most durable and easy working pumps on the market.

By working the cylinder instead of the plunger we have the most powerful Force Pump ever placed on the market.

In case of fire it has no equal—Easy working—always primed—Never Freezes.

ASK FOR OUR DESCRIPTIVE CATALOGUE AND PRICE LIST.

Manufactured only by

THE AYLMER PUMP & SCALE COMPANY LIMITED

AYLMER, ONTARIO

If You Will, You Can Earn More

We have a proposition that enables energetic men to add a desirable increase to their present salary. The work is attractive, educative and profitable. You should know about it. For full particulars, write a postcard to

The MacLean Publishing Co., Limited

143-149 University Avenue, Toronto, Canada.

Greater Love Hath No Man

(Continued from page 28.)

curl back like ocean waves breaking upon jagged rocks.

He had little time to think now for his brain was too much dazed by the swift movement. He was surprised, nevertheless, to find that he felt no pain, and when the motion ceased he was able to breathe without much difficulty. This gave him new hope, and he believed that air must be coming to him through some opening. He could not see, but he began to grope around with his hands through the soft yielding snow. Presently they struck something hard, and to Tim's delight he found it was a large tree which had withstood the fierce impact of the slide. In feverish haste he tore away more of the snow and found that on one side of the tree the mass was very hard, while on the other it was quite loose. In some manner he had escaped the tree and had been swirled around below as if in an eddy. New hope now seized him. The tree would mean his salvation. Working himself forward inch by inch from his cramped quarters, he was ere long able to reach a limb some distance above. By means of this he slowly pulled himself up. Then he gained another, and still another. Often he paused for he was very weary, and becoming weaker all the time. But still he struggled upward, the snow getting lighter as he rose. Then, what was that? Light, thank God, it was light, the light of the sun. Never did it seem so good to him as he struggled from that ocean of snow and fell forward senseless.

And there he was found by the Indians when they came to view the snowslide, and taking him to their village nursed him back to life. But of the madman nothing could be found; the Napoleon of the mountains had at last met his Waterloo.

Agriculture in Great Britain

There are in Great Britain only one and a half millions of people connected with the industry of agriculture to-day, as compared with 2,132,000 fifty years ago. As against Great Britain's one million and a half, France has nine millions on the soil, Germany has ten millions, and Austria-Hungary fourteen millions. Taking it another way, and comparing the numbers per acre in the smaller States of Europe: In Great Britain there are 40 persons on the soil—farmers and laborers—for every thousand acres; in Denmark there are 70 per thousand acres; in the Netherlands there are 120; and in Belgium, 160.

He only is rich who can enjoy without owning; he who is covetous is poor though he have millions.

—Dr. Marden.

Going the Limit

Should a Woman Consider Her Duty to Herself?

By TOM DOBBIN

"LET'S HAVE tea an hour earlier than usual this afternoon, mother. We must get those last loads of wheat in this afternoon. The barometer has gone down since noon and it won't do to be caught napping."

Nor was it Tom Brown's habit to be caught napping. From the day that he won the sweepstakes' prize in the boys' class at the Fall plowing match down to the day that he won the medal for owning the best kept and the best managed farm in the district, he was spoken of as being a born farmer. No man was more alert than he in the choice of his beefers or of his milkers. His pens were full of hogs when the price was highest, and when the price was low he was preparing for the next rise in values. He had the instinct for buying machinery that would save labor and produce profits. Indeed, the barometer was the latest thing that he had added to his equipment. Already it had saved by its price many times over, so effectually had it warned of approaching storms.

Only once, in the estimation of his steady-going fellow agriculturists, had he made a serious blunder, and that was when he married the local school-mistress. "What nonsense. What does she know about farming? Nothing like a wife who has been brought up to the farm to help out a man like Brown."

So the neighbors whispered, but loudly enough for the young wife to hear and to be stung to the heart.

Not a whit discouraged, Mrs. Brown made up her mind to demonstrate to her critics that a girl who had the brains to secure a teacher's certificate and the gumption to manage successfully a school of stirring children had it in her to keep a farm house, and, what is a great sight better thing to do, to make a good home. Naturally, she was nervously anxious to succeed. She loved her work and home for their own sake. Then she felt that her reputation as a success was at stake. Well did she know what would pass muster without comment in her neighbor's housekeeping, would prove the occasion of endless talk if found in hers. For the same reason she allowed herself to be saddled with more than her share of social and public work. When for any reason a local speaker or lady delegate failed of their part in any programme of The Women's Institute, Mrs. Brown was expected to rise to the occasion. The same principle held for the church work. "You've been used to such things, and you've things so handy at your place it's no trouble for you," was the ex planation offered for looking to her to do things as a matter of course that older and more experienced women did with fear and trembling. Little did her critics realize that the brilliant papers that she read or the bright

(Cintinued on page 94.)

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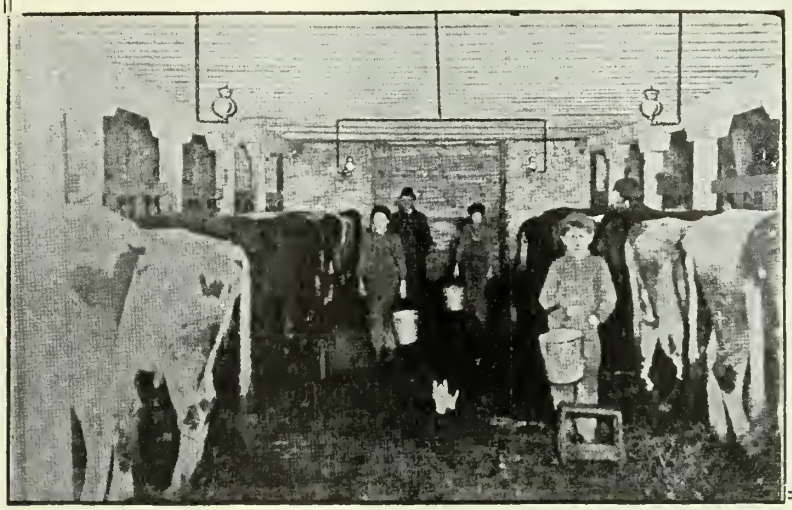

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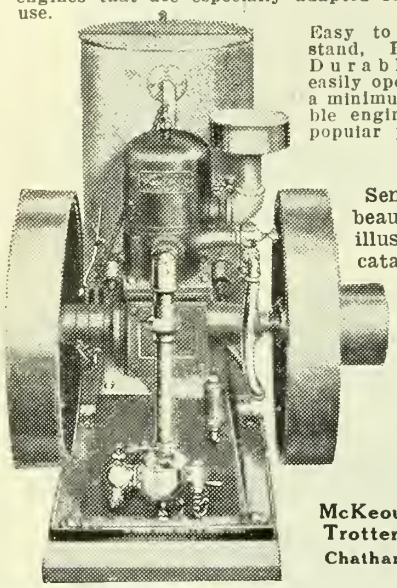

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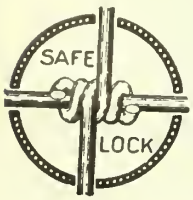

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Homemakers' Conference

MUSIC IN THE HOME

By MRS. SYRUS NETHERTON

The following extracts from a paper read at the Little Britain Women's Institute, Ontario, are worth thinking about.—Genevieve.

"A piano!" exclaimed a father not long since, to his daughter, who asked him to purchase this instrument, "When I have more money than I want I will waste it on useless things," and from this he dilated upon the folly of attending to music, which can do nobody any good. He is the representative of a class of persons in every community who see no benefit resulting from that part of education called ornamental.

We cannot agree with some writers, who claim that any attention to music, by those who do not expect to use the knowledge thus acquired in their vocation is a waste of time. Many young ladies will not make special use of vocal or instrumental music in future life, but their knowledge in that line will not be lost. The discipline of their musical education remains. We read of a lady of superior vocal talent, who spent a year in Europe to perfect her musical studies, anticipating a career of fame in the world of art, but soon after her return from abroad she fell in love with a likely young farmer and married him. Some people said "What an idea, to study music so much and then abandon it for a husband." But she did no such thing. Her musical culture serves her a grand purpose in that farm house; she is a more cultivated and attractive wife for it. She presides over her little realm of love and labor with more dignity. She is a more accomplished mother in consequence of her musical training. Her children enjoy better advantages for the refinement of life. A larger and sweeter allotment of happiness comes to that household than would be possible without music. Possibly, as circumstances are she may have devoted too much time to music but better that than too little. We do not believe she regrets for one moment that she pursued the study of music so long and thoroughly.

The same would be true in other positions where music is not followed as a profession. We believe that music should be made a branch of education. It often affects the mind and heart when parental counsel and authority fall powerless upon the child. It is somewhat singular that parents have attached so little importance to this art in the family, when its power in other relations has long been acknowledged. Some Jesuit missionaries in the early history of America, found the Indians very hostile, when they met them. Indeed they meant to destroy the missionaries, but as they came up to them for attack, the sound of a sweet-toned instrument, played by one of the Jesuits, charmed them into friendly relations.

Everyone must have noticed how elevating to the thoughts is pure music. It is equally corrupting when put to base and shameful purposes. It is believed that a young man who is an admirer and performer of elevated music, is less likely to be seduced into vice, by the temptations of the world. Visit the haunts of dissipation and vice, wherever they are found and scarcely one reveller is seen, whose heart has been familiar with such music as we recommend for the fireside. If we had more music in our homes young people would not go to such places to spend their social hours. Roughness and vulgarity usually forsake the abodes of sweetest song.

Children commit to memory poetry that is sung more readily than poetry that is spoken. It follows that the musical art must be disciplinary in the family. It exerts a controlling influence over the passions of men, it must be better than rods and dark closets for the child. The story of the clergyman, whose children were remarkable for cheerfulness and amiability is not at all incredible. Someone asked him what was the secret of his success in training children. He replied "When anything disturbs their tempers I say to them 'Sing,' and if I hear them speaking against any person I call them to me to sing, and so they have sung away all causes of discontent and every disposition to scandal." If parents and children could unite their voices in some soothing airs, when things are not exactly as they should be, no doubt the result would be excellent.

The sentiments which are sung in the family, will usually survive when many others are lost. The aged can now rehearse the hymns to which they were accustomed in childhood. We have seen enough to show that music deserves a place in the family for its educational power. As a refining, softening, elevating element, too much cannot be said in its favor. Let those parents who have attached no importance to it beyond amusement, look around them a season and observation will prove to them the truth of these sentiments.

INSTITUTE NEWS FROM NOVA SCOTIA

Salt Springs, N.S.

Dear Genevieve:—

In reply to your inquiries re Women's Institute in this place will endeavor to give you a few notes. Our society was organized on July 17th, 1913, by Mrs. Laura Rose Stevens, and Miss J. Fraser, of New Glasgow, Superintendent of Women's Institutes in Nova Scotia. Although this is a country district the society has grown in four months from a membership of twelve to thirty. Our meetings are held on the third Saturday of each month so as to give the school teachers in the district a chance to attend. So far our meetings have been very interesting and instructive. Papers on "The Canning of Fruit and Vege-

tables," and "Home Nursing" have been read and discussed. We also had "Readings and Recipes." I am enclosing a copy of paper on "Simple Hints on Home Nursing," by Miss M. Rettir, one of our members who is a graduate nurse.

At our last meeting we proposed putting a new heater in the hall where we meet. A committee was appointed to purchase same.

We look forward to having a larger membership, and to helpful and interesting meetings during the winter months, the time when the farmer's wife and daughters find life most monotonous and dreary.

I am,

Yours sincerely,

Mrs. W. Gass, President.

SIMPLE HINTS ON HOME NURSING

Some cases will arise in which whatever is to be done must be done at once. Some knowledge of nursing is of great value in these emergencies. And remember the simplest things are often the most useful, above all things do not get excited or you will probably forget all you do know.

Besides emergencies, there is the care of the convalescent—by no means the easiest kind of nursing—and the aged are apt to come under the care of some member of the family other than a professional nurse. To attempt to give any suggestions on these would take too long. There are so many one could give even on the general principles of Hygiene, Sanitary Science, and Physical Culture. So we will go back and discuss a few emergencies that we will be liable to meet at any time.

In Treating Burns and Scalds, First, exclude the air. If a mere reddening of the skin, sprinkle with baking soda and tie it up with a wet bandage. But if the burn is severe enough to blister or destroy the cuticle, apply vaseline or olive oil, and cover with a thick absorbent dressing. The burns from strong acids are treated in the same way, further caustic action being prevented by bathing first with a weak alkaline solution as of soda or ammonia. An alkaline burn should first be bathed with a weak acid solution—as vinegar or lemon juice—a teaspoonful to a cup of water. Severe burns are apt to leave bad scars but a great deal can be done towards preventing this by keeping the burns in good condition.

Wounds.—If no large blood vessels have been cut apply hot water as hot as can be borne. This causes the blood vessels to shrink, which, with the clot which forms, soon stops the bleeding. If it cannot be stopped this way, place on the wound a pad of clean cotton and tie a bandage tightly around it. If a large vein or artery, the rapid flow of blood will prevent clotting. If a vein has been cut the blood is of a dark purplish hue. Make pressure with the hands below the wound—nearer the hand or foot. If an

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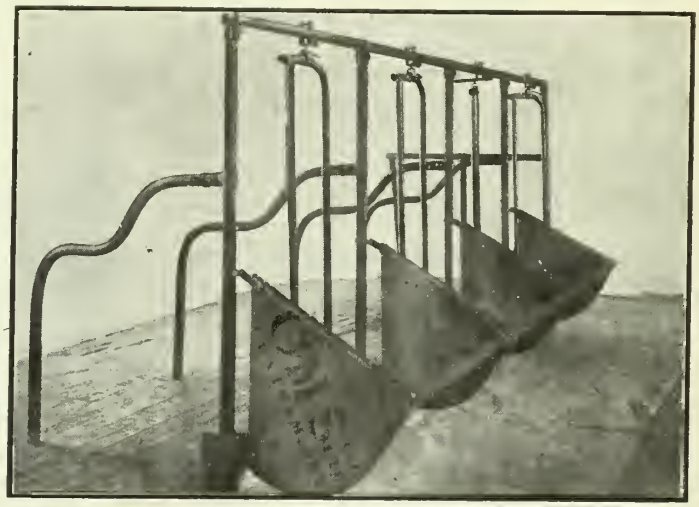

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artery, the blood is of a brighter red and will come in spurts from the side of the wound nearest the heart. Apply pressure above the wound nearer to the heart.

A ghastly effect is often produced by a wound which bleeds freely but when cleaned proves unimportant. This is apt to be the case with cuts about the head and face. In washing, do not touch the wound, but squeeze a stream of antiseptic solution over it. When thoroughly clean bring the edges together as nearly as you can and hold in place by adhesive strips, if the wound is but slight, leaving room between them for the serum to escape. Over this place a dressing to exclude the air, and bandage.

Foreign Bodies in the Ear are often troublesome. If an insect gets in, hold a bright light close to the ear and it may be attracted out. Then try syringing it with warm salt and water. If still unsuccessful, lay the sufferer on the other side and pulling the tip of the ear upward and backward, fill the ear tube with warm olive oil. The insect will be probably drowned and float to the surface of the oil. Do not syringe the ear if there is anything lodged in it that may swell, as a pea or bean.

Foreign Body in the Nostril. Make the patient take a full breath, then close the mouth and the other nostril, trying at the same time to blow the nose. Giving snuff or something to cause sneezing may help. If the object is in sight compress the nostril above to prevent it slipping up and hook it out with a bent hair pin or wire.

Anything in the Throat may sometimes be hooked out the same way if too far down to reach with the fingers.

A Foreign Body in the Windpipe will usually be expelled by coughing. A blow on the back will be of use to a person choking. A child may be taken up by the feet held head downward and given a succession of blows between the shoulders. If the windpipe is obstructed so the supply of air is cut off as in drowning, strangling or suffocation from gases, the action of the lungs may have ceased some time before death ensues. Having pulled the tongue forward, loosen all clothing and proceed to give Artificial Respiration, to describe which would take too long. But it must be persisted in until respiration takes place, or all hope of establishing it is lost. Do not consider it hopeless under two hours.

It is not rare gifts that make men happy. It is the common and simple and universal gifts; it is health, and the glance of sunshine in the morning; it is fresh air; it is the friend, the lover; it is the kindliness that meets us on the journey; it may be only a word, a smile, a look—it is these and not any rarity of blessing that are God's gentle art of making happy.

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—A Standard treatment with years of success back of it to guarantee results is

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PRESIDENT SUSPENDERS

NONE SO EASY

Farm Outlook and Output

(Continued from page 37.)

tion in the United States as well as the cities of Canada will continue to increase, and it is extremely unlikely that we will ever again see as cheap meat as in the past. A peculiar situation developed in the U.S. recently. Out of an importation of 10,856,576 lbs. of fresh beef in one month, 6,000,000 came from England, which is not supposed to have any beef to spare. Although this importation may look large, it is in reality, as one writer points out, less than a day's run of the four big cattle markets of the United States.

An example of the way United States beef feeders work may be gleaned from the following Ohio feeder's account:—

"A certain lot of steers were purchased July 7, 1911, at $4.25 in Chicago. Freight, commission and exchange amounted to 21 cents a hundred, making a total cost of $4.46 for the load of 28 cattle, which averaged 868 pounds. These cattle were started on some old corn September 1, and fed shocked corn, husked corn and some clover hay until January 1. They gained an average of 1½ pounds a day during the feeding period. The pasture was short during the late summer owing to the drouth, otherwise the cattle would have been in better condition when feeding was commenced.

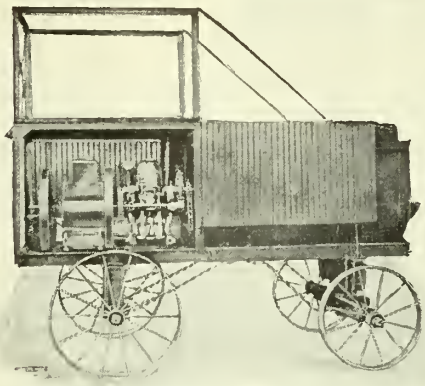
These cattle were sold for $5.90, or an advance of $1.44, or $696 for the load. Fifteen hundred bushels of corn were fed, which made 46 cents a bushel for it. However, 46 hogs were fattened after the cattle. They were sold for $424 more than cost, and adding this sum to $696, makes a total return of $1,120 for cattle and hogs, or better than 75 cents a bushel for the corn fed. The present high prices asked for stockers and feeding cattle, together with the high price of corn, will probably deter many farmers in their feeding operations, for the present at least. However, a very important factor to be considered is the feeding of the corn and hay right on the farm, aside from the direct monetary gain. This means much in keeping up the fertility of the soil. And after all that is one of the big problems everywhere."

Money in Hogs

Hog prices have been good for some time and Canadian farmers in all parts have a good paying business either in producing exclusively for the meat trade, or for both the market and the pure-bred stock demand. Breeders of hogs have had a good season and report the demand for breeding stock as far beyond their ability to fill. The breeder who develops a strain of money-makers and lets people know it, will always make good money on his sales.

"Alberta farmers had a narrow escape from low hog prices last month," says one writer. "Heavy supplies in November continued into December soon gave the packing houses at Calgary all they could handle, and prices began to fall. For a time it looked as though the market would go on the basis of Toronto and Winnipeg, but buyers from Seattle arrived and bought heavily, and so saved the situation. A wide market is a very useful institution to have in reserve when supplies overtax local accommodation."

"Eleven principal hog markets of the U.S. during the first week of January received 622,000 hogs, compared with 584,000 during the corresponding week of 1913, but prices were 90 cents to $1 per cwt. higher than a year ago and instead of arresting a previous 50 cents



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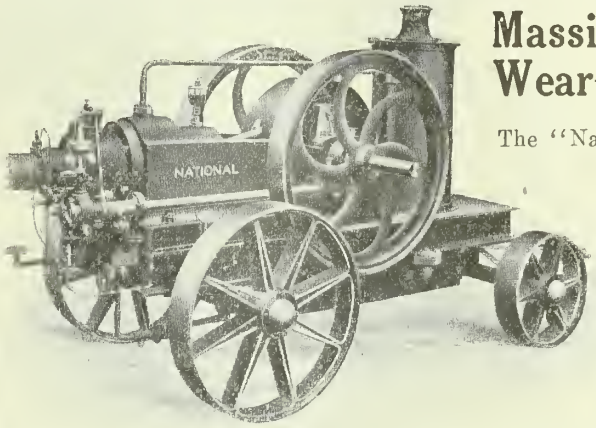

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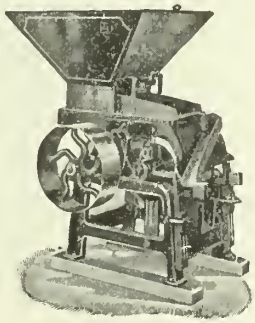

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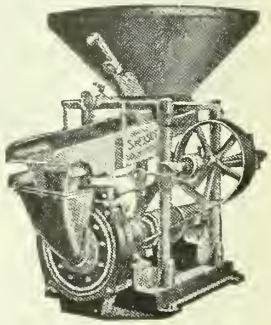

Feed Grinder.

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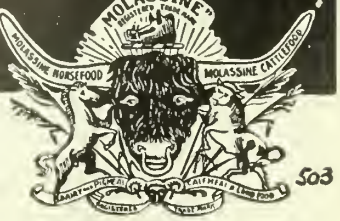

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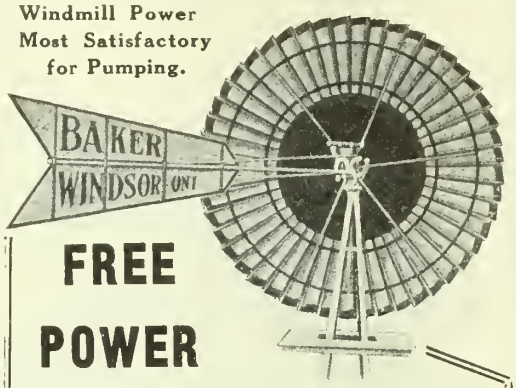
The invention is so simple that even a child can now master music without costly instruction. Anyone can have this new method on a free trial merely by asking. Simply write saying, "Send me the Easy Form Music Method as announced in

FREE TRIAL

The complete system together with 100 pieces of music will then be sent to you Free, all charges prepaid and absolutely not one cent to pay. You keep it seven days to thoroughly prove it is all that is claimed for it, then if you are satisfied, send us $1.50 and one dollar a month until $6.50 in all is paid. If you are not delighted with it, send it back in seven days and you will have risked nothing and will be under no obligations to us.

Be sure to state number of white keys on your piano or organ, also post office. Address Easy Method Music Co., 400 Wilson Bldg., Toronto, Canada.

Windmill Power Most Satisfactory for Pumping.



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is more than saved in one year, by the saving made on gasoline, oil, batteries and repairs, to say nothing of the time you lose when the engine goes wrong.

The Baker Back Geared Ball Bearing Pumping Mill is not equalled by any other power.

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By a Practical Farmer

in a practical way. You can do it and he tells you how, and proves his methods in a book he has written in a plain, easy-to-understand way. The book is endorsed by prominent farmers, and experiment stations. It sells for $1.35 postage paid, and shows you how to double your land value. Money back if not satisfied.

The Farmer's Magazine
Book Department
143-149 University AvTore., onto

advance in two weeks a further appreciation of 15 cents was registered," says the Breeder's Gazette. The average cost of hogs at Chicago last week, as near as an average can be figured, was $8.20, the highest since last October and, with the exception of 1910, the highest on record at this season. This average was 80 cents higher than a year ago, $1.85 higher than two years ago, $3.65 above the same period of 1908 and $2 higher than a ten-year average for the corresponding week since 1913."

Just now there seems to be a small revival due to the sheep and wool business in Canada.

$4,000 Income from Skunks

(Continued from page 16.)

around through them and pick out the ones I want. So it's easy to tickle their noses with the sponge. One whiff of the stuff makes them drop and a crack on the back with a light club does the rest of the business and prevents any power to spread scent. I've killed off fifty of my batch with dozens of the others running around and never had a trace of trouble." This is a humanitarian as well as a most effectual method, surely.

A good deal of care must be taken with the skunk skins that does not pertain to those of other animals. Since the skunks fatten in the fall and spend the winter largely in their dens, when killed and skinned a large amount of fat is likely to adhere to the hide. This must be scraped off to prevent "heating" and consequent deterioration of the fur. This fat may be rendered into oil, which, as a by-product should bring some return, though a large amount cannot be expected. In shipping, also, the skunk pelts should be kept by themselves and in comparatively small bales since the odor and grease are likely to have effect on other skins.

Let no farmer jump to the conclusion, when he has read this article, that he can make a fortune in the next five years by turning half your hundred acres into a skunk pasture. A few people, the writer has heard of and talked with, had ideas like this a few years ago, but experience has taught them rather severe lessons. One can begin the skunk business in a small way at first—that is, small as regards the number of animals to start with, not in reference to the size of the enclosure—and will have some satisfactory measure of success which will increase as year by year brings added experience. Anyone will have, probably, a better chance to make good on such a proposition on a farm in Canada than Mr. Durno had in Southern Minnesota, since, as he suggests and as is almost a by-word among the dealers, "The colder the weather the better the fur."

Back to the Sugar Bush

(Continued from page 36.)

rapid. Boiling, as everyone knows, helps to cleanse the product by bringing up dirt and impurities in a scum which should be carefully removed. I used to carry this clarifying process further by adding egg white or milk to the boiling syrup, but have found that if care is taken to keep the sap clean it is unnecessary to use a "settler," and it is possible that syrup may not keep quite as well where eggs or milk have been added. However this is not a very important consideration.

Perhaps the most delicate point in the whole process of syrup making is to determine just the right "syruping off" point. An experienced hand may have tests of his own that prove satisfactory for him, but the beginner is safer to use a thermometer or saccharometer. J. B. Spencer, B. S. A., gives the following rules for testing with a thermometer. "The boiling point of liquids varies with their density and with the altitude above sea level. At sea level water boils at 212, syrup at 219, soft sugar at 238 to 240 and hard sugar at 242 and 245 deg. Fahr. The boiling point for each of these is lowered one degree for about 550 ft. ascent. Since sugar groves are usually at some height above sea level it is necessary for accuracy to test the thermomenter in boiling water. At whatever degree the water boils there should be added for syrup 7 degrees, for soft sugar 26 to 28 degrees, and for hard sugar 30 to 33 degrees. If, therefore, water boils at 210 degrees, the syruping temperature would be 217, the soft sugar temperature 236 to 238, and the hard sugar temperature would be 240 to 243 degrees each in a state of boiling. Consequently when the boiling syrup reaches these respective figures on the thermometer it is sufficiently dense to be drawn off for the purpose desired."

The saccharometer or hydrometer is used for testing the density of the syrup either hot or cold. For testing boiling syrup the liquid is poured into a vessel two inches in diameter and nine inches deep and the saccharometer placed in it. When the syrup is of standard weight the instrument will register 30½ degrees. If it registers less, the syrup is too light, if more too heavy. In cold syrup (say at 70 degrees) of the proper density, the hydrometer will settle to 35½ degrees. Before testing, the instrument should be brought to approximately the same temperature as the liquid.

If you want to make sugar, it is a simple matter to boil this syrup down until it will form a hard lump when dropped into cold water, or until it will crack under pressure when poured on packed snow or ice. When the liquid threatens to boil over a few drops of sweet cream or a piece of butter are just as effective as the fat pork commonly used, and there will be no danger of tainting the sugar. If you have always run your sugar off into hard blocks, try granulating some this year. When the syrup is boiled to the temperature of 240 or 242 degrees, stir sufficiently to make the desired grain, pour into a mould and stir until it granulates. When dried out it may be pulverized if you like, and will be almost as fine and white as flour. This is delicious in cakes, cake icings and for garnishing desserts, etc. Care must be taken not to scorch the sugar while drying.

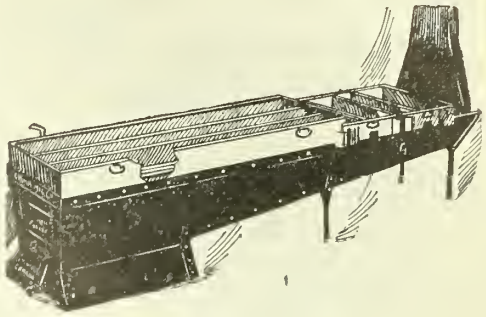
One of the greatest enemies to the farmers who are producing pure Maple Syrup from their maple bushes is the manufacturer who tries to popularize some just-as-good preparation by trading on the good name of maple sugar, by a designedly unfair use of the word maple. Already the imitator has put on the market many preparations that contain no maple products at all. All these are justifiable as a business proposition. They may be good in themselves. There may be a demand for them because of their own inherent goodness.

Their sin lies in their trading on another's reputation. Because maple products are valuable and good is not sufficient excuse for spurious counterfeits to secure part of the trade created by this demand.

Everybody wants the pure goods—pure maple sugar and pure maple syrup. At present these people have no sure guarantee that they are getting the pure goods. This is a matter entirely for the lawmakers. Legal protection through the pure food laws of the country is urgently demanded.

There are enough maple trees now standing idle, to supply the country with these delectable table dainties if the unfair competition of imposture preparations was eliminated by law.

Let these other products stand on their own merits. Let their names force their way into popular demand by sheer merit only. The word maple should not be attached to any food product where that product is sought as a substitute for the pure maple goods. To do so is a trade-mark crime. It calls for legislative correction now.



THE question of boiling sap depends on yourself and boiling outfit. The best sap is often ruined with poor outfits, and all your time and trouble goes for little or nothing. It is your duty to make a syrup that is clean, pure and wholesome, and high priced. You must make it under proper conditions. The Champion Evaporator is the best shallow boiling machine on the market, and will make your maple grove the best paying proposition on your farm. **Write us to-day for our latest catalogue.**

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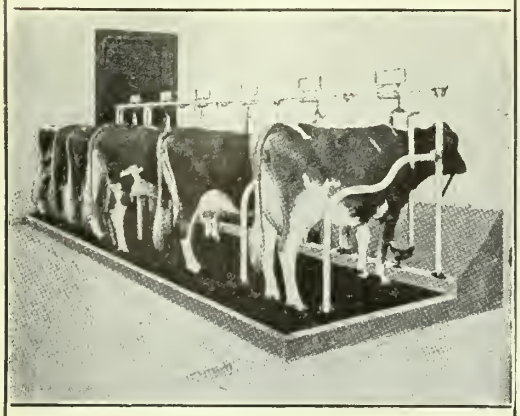

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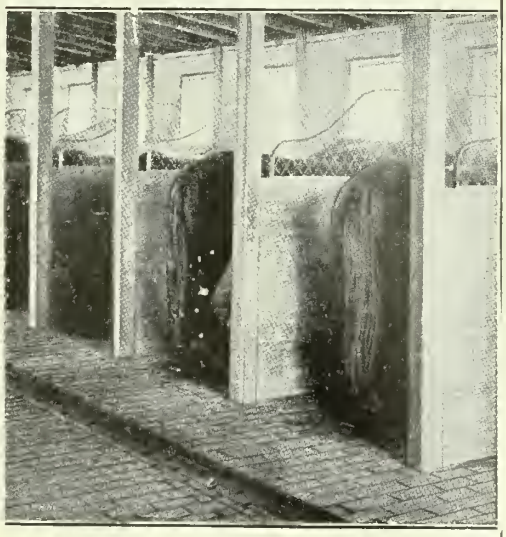

Cork Paving Brick are used by leading farmers, Agricultural Colleges and Government farms in both Canada and the United States. They give continued service year after year—require no repairing and ensure greater satisfaction.

Write to Sole Canadian Agency

The KENT COMPANY, Limited
Canadian Express Building, Montreal, P.Q.

During the entire season, it is most important to keep the evaporator clean. Where covers are used and the sap is well strained, it may not be necessary to wash the pan more than once in two or three days, but it is always time to clean it when it appears dirty on the sides. Sour milk followed by a clean washing is good to remove the nitre deposited during the boiling.

Canning and Marketing

There is some controversy among sugar-makers on the question of whether the syrup should be canned hot or cold. I prefer to use the latter method for several reasons. A gallon of hot syrup will not make a gallon after it has cooled, the can will be about half a pound lighter than it should be, and the customer may feel that he is being cheated. Besides the vacuum formed above the syrup when it has been canned hot may allow it to either ferment or crystallize. After the syrup has been strained and allowed to settle for some hours, the cans are scalded and filled, a few minutes allowed for air bubbles to rise and break, and more syrup added until the can is actually filled. The cap is then screwed on lightly and the sides of the can (these are tin cans, not glass sealers), pressed gently until the syrup appears around the screw cap. Without removing the pressure the caps are screwed down firmly and the syrup keeps from one season to another in first-class condition.

The only difficulty in keeping the sugar cakes comes from dampness. Wrapped in parchment paper and packed in boxes either perfectly air-tight or else uncovered, and kept in a dry place, the sugar will not deteriorate.

It is a matter of good business to have at least printed slips bearing the stamp of "pure and unadulterated" with the maker's name and address put on each can. It protects the consumer and brings better prices. In fact the public will pay almost any price for maple products as an annual treat if they know they are getting the pure goods. Personally I believe in working up a trade among private customers, but I know of several farmers who sell their goods very satisfactorily to retail grocers. Being near a good market we always try to take a load of syrup out right after the first run while the prices are highest, and about twice a week after this until the demand begins to slacken or until the market is filled from other sources. The rest of the season's flow we keep until there is a scarcity again, taking in a few gallons occasionally when we do our regular marketing. We always have several orders right around home, as well, so it wouldn't pay us to ship to the city, although I believe most of the large sugar-makers find this most profitable.

It is hard to give general figures on the profits to be derived from this industry as the yield varies so much from year to year. Last year our bush yielded at the rate of 1¾ lbs. of sugar per tree, while it has given as much as 2¼ lbs. per tree. Taking one year with another, however, we average $200 from 500 trees. A sugar-maker who has kept a more accurate account shows the following statement from twenty-five hundred trees.

124 gallons syrup @ $1.50	$186.00
215 gallons syrup @ $1.25	268.75
526 lbs. sugar @ .15	78.90
Total	$533.65
Freight and express	12.50
Net profit	$521.15

With the growing demand for luxuries there is a most promising outlook for the sale of maple products. At present there are two things standing in the way,—the public is not sufficiently educated to the use of these products and the inferior compounds of cheap sugar, glucose and flavoring extracts which for so long have displaced the pure goods, have not helped to create a demand for them. What the farmer needs to do is to advertise, even to getting out printed pamphlets of his own, with pictures of the groves, describing the methods used in the preparation, emphasizing particularly the care and cleanliness, and suggesting the uses of maple products; and then to put on the market an article whose quality will be more convincing than any advertisement.

The Red Gold of Leamington

(Continued from page 11.)

stall. Nozzles are placed every four feet along an overhead rod from which the water is forced twenty-five feet. I have an eight h.p. gasoline engine upon the lake shore which lifts the water seventy feet to the top of the cliff and forces it at present one thousand feet to the farthest nozzle. The system costs about $150 an acre and in this work is certainly a paying proposition.

"This method of watering accomplishes another object also. It drives the aphids and cucumber beetles off the crops. I only wish someone would tell me how to control squash beetles as easily.

"No! I have not been greatly troubled with fungus diseases. This district seems very favored that way; but perhaps they are on the road somewhere. The most effective remedy we have is to burn tobacco stalks in the houses. The fumes chase the little wretches out very satisfactorily.

Getting a Half-Nelson on the Markets

"We have had no trouble with markets for these crops. Our outside stuff is harder to dispose of as a matter of fact. The latter comes on at a time when the other vegetable districts of the Province are also producing, although we are ten or twelve days earlier. But with our greenhouse stuff we have little difficulty. Since our co-operative society has been operating we are getting higher returns too. Our manager is an expert salesman with a wide experience and we have to

pay him a good salary to retain his services. But he is worth it to us. He takes the place of a commission man, and we can see what he is doing. None of the members of this association have any inclination to bolt, I can tell you, although some were offered alluring inducements to do so this past season.

"I have pretty nearly solved the labor problem by keeping my best men all through the year. Of course the nature of the work demands that I do this. I have three men beside myself the year round. During the summer I hire three or four more. The only fault I have to find with the labor situation is the abnormal prices that we have to pay. This is due to outsiders offering very large wages.

"For instance, a large pickle factory has just been established near here by a wealthy American firm. Now they require a large gang and they must have them. Result: Up goes labor so high that a workingman can about afford to pick tomatoes with his Sunday pants on down here. Perhaps conditions will improve—for the growers—after awhile. But anyhow we manage to pick up a living somehow," he concluded, with a twinkle in his eye. "We aren't kicking any more than enough to keep us healthy."

So this grower smiles as he watches his men pick his wealth from the vines—the red gold of Leamington. And he can afford to laugh and all the others, too, who are getting into the game early. For there is more sure money in the tomato vine than there ever was in the Klondyke mine.

Now twenty years ago this same sandy lake-shore land was selling at from $25 to $40 an acre, and farmers weren't dead sure it was worth that. Mr. Bradford and his neighbors smile at this too, since the days of prosperity have come upon them. But when I tell you in my next article what the Leamington sand is valued at you will cease to smile—that is, you will cease if you have contemplated the purchase of any of it. In fact you will have a vision of a pay-streak of British Columbia River sand.

Roman Room For Teaching Latin

Believing that pupils will more quickly learn Latin, the language of the ancient Romans, when reciting in a room modeled after the principal room in the house of a Roman family, the school board has fitted up such a room in the Hollywood High School, Los Angeles. Interest in the study of Latin is increased by a sense of reality regarding the Romans, and their language seems alive and not dead when one thinks of it being spoken by human beings like ourselves. The significance of each object is explained, and a feature is a great banquet given by each class in the Roman style, at which the toga is adopted as the dress, and the viands are served after the manner of the ancients.

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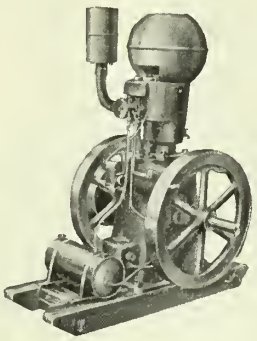
The Lister Gasoline Engine

(British Made Throughout)



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No babbitt metal to wear and run out.

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We have sold over 50,000 Melotte Cream Separators in Canada during 15 years. Ask any Canadian user how he likes the Melotte.

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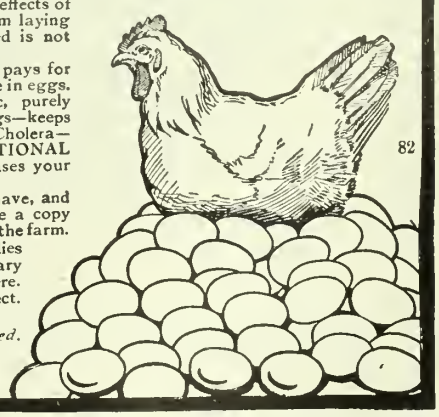

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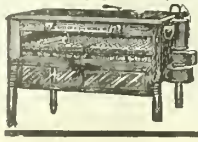

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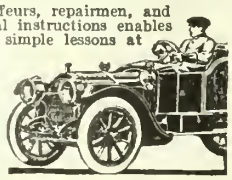

Practical Auto School, 68-S Beaver St., N.Y. City.

Refreshments for the Valentine Party

If You Want Something Different

By JEAN McKENZIE

Any girl who is planning to entertain her friends on Valentine night will be more than pleased with this article from our Western correspondent. A few fresh, crisp ideas give the home-loving girl a cue for working out dozens of others of her own creation—the point where the test of the household artist comes in.—Editor.

There are a number of legends as to the origin of Saint Valentine's Day, and of the old-fashioned customs associated with it. One story is that Valentine, (who was canonized after his death), was beheaded during the reign of the Emperor Claudius, on the fourteenth day of February. The old story goes on to say that from that time, the birds always mated on that day, and the custom arose among the young people of the country, of choosing each other for valentines for the ensuing year, and exchanging tokens, on this anniversary. This old custom of exchanging valentines has changed much in the character since then, and is not nearly so common as it used to be. An old encyclopaedia says that the exchanging of valentines is "A harmless folly which is gradually dying out." A more up-to-date way of celebrating St. Valentine's Day, is by a party or dance, at which the decorations and supper--favors are appropriate to the occasion. Little heart-shaped or heart decorated favors, with nonsensical rhymes are easily obtained, and add much to the jollity of the gathering.

At little affairs of this kind, do not serve a stand-up supper, one of those affairs at which one bestows on the victim a table-napkin and a general assortment of table-ware, which in the natural order of things, requires at least two pairs of hands to manage properly, without an available inch of space anywhere to set even some of the things on. A much more enjoyable form of entertainment is where there are only as many guests as can be seated comfortably, and seat them at small tables, four to each table is a very good number. But even a long table which will seat all is to be preferred to the "stand-up" supper.

An elaborate supper is not at all necessary. Sandwiches, one salad, dainty cakes and ices, and coffee will be quite sufficient. Some appropriate menus would be:

Fatty Sandwiches — Stuffed Olives
Coffee
Ice Cream — Rolled Wafers
Salted Almonds — Rose Bon Bons
Cheese and Olive Salad
Bread and Butter Sandwiches
Coffee
Orange Jelly in Ambush — Royal Hearts
Ribbon Hearts and Cream Bars
Chicken and Walnut Salad
Thin Bread and Butter
Coffee
Pineapple Ice Cream — Mocha Hearts
Snow Balls — Creamed Dates

To Make Patty Sandwiches

Cut white bread in rounds, then trim to heart-shape, and cut entire wheat or more white bread to the same size and shape, but cutting out the centre, leaving a half-inch rim. Spread the whole slice with the mixture without the dressing, put on the rim, and when serving spread the dressing in the centre, garnished with hard-boiled egg, olives, or beets.

Fillings for Patties

Mix ½ cup minced chicken with one-third cup minced ham, add two tablespoons each of cream cheese mashed smooth and chopped cucumber pickle. Season with paprike, and spread. Serve with mayonnaise, or any preferred dressing in the centre. Any favorite sandwich filling may be used in Patty Sandwiches, or they may be made as sweet sandwiches without dressing.

Rolled Wafers

¼ cup butter
½ cup powdered sugar
¼ cup milk
⅞ cup bread flour
½ teaspoon vanilla

Cream butter, add sugar gradually, and milk drop by drop, then add flour and flavoring. Spread very thinly with a broad, long bladed knife on a buttered, inverted dripping pan. Crease in three-inch squares and bake in a slow oven until delicately browned. Place pan on back of range, cut squares apart with a sharp knife, and roll while warm in tubular or cornucopia shape. If squares become too brittle to roll, place in the oven to soften. If rolled cornucopia shape, they may be filled with whipped cream, just before sending to the table, if preferred.

Cheese and Olive Salad

Mash a cream cheese, moisten with cream and season with salt and cayenne. Add six olives finely chopped. Press in original shape of cheese, and let stand two hours. Cut in slices, and serve on lettuce leaves with mayonnaise dressing.

Chicken and Walnut Salad

Cut cold boiled or roasted chicken in cubes, there should be 1½ cups. Put ½ cup English walnut meats in a pan, sprinkle sparingly with salt, and add ¾ tablespoon butter. Cook in a slow oven until browned and thoroughly heated, stirring occasionally. Remove from oven, and break in pieces. Mix in chicken and nuts, and moisten with French dressing. Add ¾ cup celery cut in small pieces. Arrange on lettuce leaves, and cover with mayonnaise.

Orange Jelly in Ambush

Cut oranges in halves lengthwise, remove pulp and juice. With juice make orange jelly to fill half the pieces. Fill remaining pieces with Charlotte Russe mixture, when both are firmly put to-

gether in pairs, and tie together with narrow white ribbon.

Royal Hearts

Mix and sift 2 cups flour and ½ cup brown sugar. Wash ¾ cup butter, and work into first mixture, using tips of fingers. Roll to 1-13 inch in thickness, shape with a round cutter 5 inches in diameter. Cut each round in quarters, and shape into hearts. Brush over with yolk of egg diluted with ¾ teaspoon water, and bake in a slow oven.

Mocha Hearts

Bake a sponge-cake mixture in sheets. Shape in small hearts, and cut in 3 layers. Put layers together with thin coating of frosting. Spread frosting around sides, and roll in shredded cocoanut. Ornament top with frosting forced through a pastry bag and tube. Begin at centre and coil frosting around until surface is covered. Garnish centre of top with a candied cherry.

Ribbon Hearts

On waxed paper lay three sheets of fondart, one plain vanilla, one pink ratafia, kneaded full of finely chopped nuts and one colored dark with melted unsweetened chocolate mixed in it. Let stand over night, then cut in heart shaped pieces.

Snow Balls

Roll balls of fondant of different colors and flavors in shredded cocoanut.

Cream Nut Bars

Melt fondant over hot water, stir into it chopped walnuts, and flavor with vanilla. Pour into a square buttered pan, cool, and cut in bars.

Creamed Dates

Remove stones from dates. Fill cavities with fondant, flavored with vanilla, and with chopped nuts kneaded into it, and roll the dates in granulated sugar.

Rose Bon Bons

Color sufficient fondant with rose, and flavor with rose essence. Roll out to 1-3 inch in thickness, cut in hearts, and decorate each one with a bit of candied rose leaf.

The Cost of It

Scientific experiment has shown that a red clover blossom contains on an average less than one-eighth of a grain of sugar. There being seven thousand grains in a pound the bee that makes a pound of honey must obtain its material from no less than fifty-six thousand clover heads.

But this is not all. In order to get the nectar the bee is compelled to insert its proboscis separately into each floret or flower-tube, composing the head of clover, and there are, it is said, about sixty florets in every head. The insect must, therefore, perform this operation sixty times fifty-six thousand, or three million three hundred and sixty thousand times, in order to obtain a pound of nectar!

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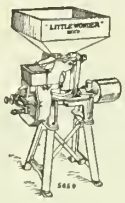

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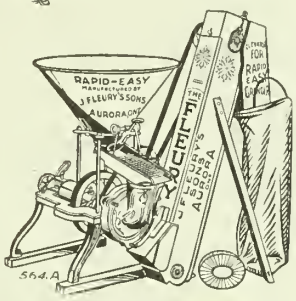

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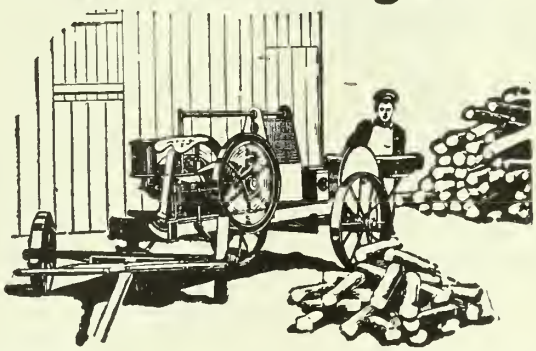

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By GRASMERE

The Ice Harvest

Don't neglect to put in an ample supply of ice for the dairy and the house, this month. Even if you have a cold spring water all year the dairy work during the hottest days of next July and August will be a great deal easier with a few ice blocks at hand; and the successful dairyman cannot afford to overlook the importance of rapid cooling on the quality of the milk.

Feeding Fat Cattle

Feeders of fat cattle for the Eastern market should have their cattle in fairly good shape now. They will find the keeping of them up to this mark, and at the same time gaining a little a very easy proposition. Increase will have to be made in the feeding of concentrates. Oil cake is perhaps the best for this purpose.

Care of the Dairy Cow

In winter feeding we must recognize that the cow needs a certain amount of food to maintain the body. This amounts usually to from 50 to 60 per cent. which would go entirely for milk production. The cow's nature calls for a very bulky ration, best supplied by corn silage. This, however, should be supplemented by alfalfa or clover hay, roots and meal. Alfalfa or red clover hay, if fed fairly liberally with silage makes a very satisfactory ration. Where good roughage is fed one pound of grain per day for each pound of butter fat produced per week is a fair guide. Timothy hay is not a satisfactory food. Too many men put their cows on short rations when not milking. A moderate amount of meal, provided you have no clover or alfalfa, fed while the cow is dry gives good returns later. With very heavy milkers there is some danger of losing them from "milk fever." Ordinarily, it is well not to milk the cow any more than is required for the calf during the first two or three days after calving. When a cow is attacked, the "air treatment" is effective.

The following suggestions for daily rations for cows milking fairly well.

1.	Corn Silage	35 lbs.
	Clover Hay	12 "
	Wheat Bran	4 "
	Oats (ground)	3 "
2.	Corn Silage	40 lbs.
	Alfalfa Hay	15 "
	Corn (ground)	3 "
3.	Clover Hay	20 lbs.
	Mangels	25 "
	Oats (ground)	3 "
	Corn (ground)	3 "
4.	Corn Silage	40 lbs.
	Clover Hay	10 "
	Mangels	30 "
	Wheat Bran	4 "
	Ground Oats	3 "
	Gluten Meal, Cottonseed Meal, or Oil Meal	1 "

Test the Corn

Many stands of corn were lost or nearly so, last year, owing to the germination qualities of the seed used. The Corn Growers have been urging farmers for some time to test their seed. This is easily done if a little care is taken. It is well to have your seed shipped to you now in the ear, if possible. Director Grisdale, of Ottawa, says that the Leaming and the White Cap Yellow Dent are the varieties of fodder corn which are giving the best results. The real corn belt lies in south-western Ontario and a few other varieties are doing well there.

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Radium in Agriculture

ACCORDING to recent experiments in Europe it appears that radium is instrumental in preventing diseases of plants, whence is likely to arise a new application of this interesting element in agriculture. For several years, workers in agronomic science have been experimenting upon the effect of radium upon vegetation by mixing radio-active substances with the usual fertilizers. The numerous results obtained in this work show that most plants, either grain or flower, are remarkably stimulated and give a better yield both in size and quality, this being often seen in the fine and healthy color of the green plants or leaves. Under these conditions it is not surprising that the same plants are in better condition to resist attacks from various sources of disease such as cause so much damage to crops, especially diseases known as cryptogamic, which arise from spores or mold. It seems that radium is to act as a preventive for such diseases as wheat rust, rotting of potatoes, grapevine mildew and many others which cause such detriment to agriculture. Such a result is only to be expected from what we know as to vital phenomena in general, and among others as concerns the human body, for all influences that tend to reduce the vitality of the system are likely to leave it a prey to harmful outside influences and infections. Such results in the application of radium in agriculture are likely to be far-reaching.

The Future Meat Supply

For weeks prior to the removal of the American tariff on cattle, speculators were busy gathering livestock in Canada and then, for some weeks after, quite a formidable procession crossed the border. This gathering process has resembled a clean-up, but it is extremely improbable that either Ontario or Quebec can supply the same number to American markets a year hence. In some districts nearly everything has been shipped away except dairy cows.

Another cause of the beef shortage is the vealing of so many calves, few more being kept than are really necessary to replenish the dairy herds. The beef industry in Canada should not be allowed to dwindle to the production of veal only. The heifers should be kept for the purpose of producing more calves, to utilize the rough feed on the farm and to make manure to maintain soil fertility. Vealing heifer calves, while it may give the farmer a quick return, is destroying good beef-making material and is too much like killing the goose that lays the golden egg. F. C. N.

The love of excellence is the voice of God bidding us up and up, lest we forget our Divine origin and revert to barbarism.

—Dr. Marden.

FERTILIZING The Potato Crop

The Potato is the most widely grown crop in the world and is by far the most important of our vegetable foods.

The average yield of Potatoes in Canada is slightly over 100 bushels per acre. Many farmers, **by proper fertilization,** treble this yield. A yield of over 300 bushels per acre is common in the Potato districts of the Dominion. During the past season a yield of 735 bushels per acre was recorded in Nova Scotia. This was exceptional, but it shows what can be done and should encourage many to try to increase their yield of tubers. The man who raised this tremendous crop of 735 bushels, FERTILIZED, using in addition to manure and phosphatic fertilizer, 160 lbs. Sulphate of Potash. He realized that Potatoes are gross feeders and thus require heavy quantities of AVAILABLE Plant Food, especially POTASH, for their proper growth and sustenance.

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"The Principal Potash-Crops of Canada."
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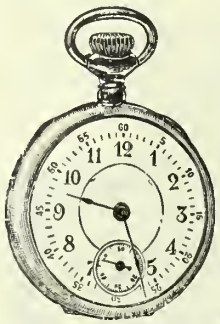

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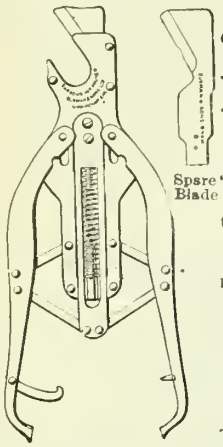

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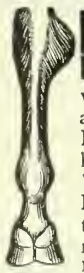

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Going the Limit

(Continued from page 81.)

speeches she made were the result of long, hard work, and that their reward was generally a splitting headache. Still less did they dream that her papers were prepared when they were sleeping the slumbers of the self-satisfied.

Despite her handicap and her hunger for womanly sympathy the plucky little woman played the game for all that it was worth. At length she had fairly won. Her critics one by one became her imitators. Even her detractors had come to the place where they were glad to avail themselves of her superior methods. Her hard struggle had not embittered her. Yet the praise and affection that she had won so hard did not bring rest but seemed, indeed, to bring to her more work and hard duties. She was appealed to for addresses far and wide. Magazines invited her to write for them. She was expected to lead in every local enterprise from mothers' meetings to discussion of the suffragette movement, and to her new responsibilities she addressed herself with all her might.

On the day mentioned she had been called up on the long distance telephone and ten minutes had been spent in arranging for an address at an approaching convention. The morning's mail had in a "hurry-up" order for an article for a farm magazine.

In the meantime the day's canning of fruit had to be got on with. The hot weather had necessitated unusual precautions in the preparation of the fruit, and in this way time and energy were taken up. Then word came that the baker's wagon had met with a mishap, and this meant that tea-biscuits must be prepared for the hungry harvesters. Last of all, Mrs. Slocum occupied fifteen precious minutes in securing information regarding the recipe for canning berries after Mrs. Brown's fashion.

Tea was ready at last, and on time at that. "I never knew it to be so hot and sultry," remarked Brown. "Life's a burden such a day as this. The barometer has gone down since we came in. Mary, can't you pick those berries. More spending money for you. It's a pity to have them wasted. The rain will about ruin them." And the busy farmer was off to his harvesting.

Shortly after the men had gone to the field a neighbor drove in from school with six-year-old Mary Brown. "Just as I was passing the school she got struck on the head with the ball and since then she has seemed faint. The teacher asked me to bring her home," he explained. So Mary had to be attended to. Meanwhile the threatening storm was gathering, and Mrs. Brown was hurrying to get her berry-picking done ere it burst. Troubles never come singly even to farm housekeepers, for as Mrs. Brown was busy in the berry patch baby Helen contrived to pull a kettle of boiling fruit over on herself. The last straw was added to Mrs. Brown's already overheavy load, and she fell over in a dead

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faint. In this condition Brown found her on his hasty arrival at the house upon the excited call of his ten-year-old son.

Brown rushed to the telephone to summon the doctor. But the electric storm had cut off all communication. For over an hour the storm king held his wild dominion. Trees were tossed about like kites. The air was full of the debris of wrecked buildings. The summer evening was one long blaze of lurid lightning. The thunder boomed its awful music as if in triumph because the forces nature that man seemed to have tamed were once more regnant and laughing at his puny efforts at their conquest. All through the chaos Mrs. Brown remained unconscious. Scarcely the move of a muscle told the fact that she was still alive. When at last the doctor arrived he was none too hopeful.

"Looks like a nervous breakdown. There's some serious lesion somewhere. No one can tell how deep. I'll send for a nerve specialist in the morning. You'll want two nurses," and so saying the doctor was gone, leaving Brown to consider the price his wife had paid for her victory and the folly that he had committed in allowing her willing shoulders to carry a burden that a Hercules would have rightly refused.

Then followed the long fight for life. For days and weeks the old doctor and the nurses held out no hope. But care, skill and affection, together with the recuperative energies of an unusually good constitution, won the day. Inch by inch the patient won her way to sufficient health and strength to allow her to sit on the verandah. Here the doctor found her on a fine afternoon in early spring.

"You've got to get out of here," he went on. "I've done all I can. Providence has spared you to your children. It's up to you to do the rest. I want to tell you that you'll never be nearer the pearly gates till you see the other side of them. Excuse plain speaking, Mrs. Brown, but you've been making a fool of yourself this last fifteen years. You've tried to please neighbors, to please your husband and to please yourself at the same time. You've tried to do your own work and the work of the neighbors as well. You can't do it. Thank God that you're not in your grave or in a mad house. Pack up and spend the summer in Muskoka with that Aunt Beatty of yours. About the middle of September come home for a week or two and then hike for Southern California. Build up a bit. You've used up the strength you should have left stored for the day you were seventy. Bood-bye. I brought you into the world, but do as I tell you, remember that nature plays no favorites." Thus the man of healing who had more medicine in his advice and his lofty courage than most doctors carry in their grips, delivered himself and was off to heal and to warn in other quarters.

"Good for you, old Sawbones," declared Tom Brown. "We've never had a holiday together, Mary, and it looked last winter as if we'd never have that privilege. My sister will look after the house. Jim will be glad to run the farm for a year before he starts for himself, especially as I will raise his wages. He

MANITOBA

The Home of Mixed Farming - The Market-Centre Province of Western Canada

As a common-sense business proposition, no man who is intending to take up a farm in Western Canada can afford to overlook Manitoba in picking his location.

Think for a minute. It is the Oldest Settled province, which is another way of saying that it has steadied down to a solid financial basis as the MARKET CENTRE for the entire West. Winnipeg is the Metropolis, and no matter how many spokes are placed in the wheel of progress—no matter how the rim is widened, the Hub will still be the Hub. Winnipeg has got too much of a head-start ever to be ousted from her present position.

The man whose farm is located in Manitoba, on Winnipeg's doorstep, has the shortest haul to market, the lowest railway rates, the best railway service. It has been estimated that the difference in dollars and cents in actual saving to the Manitoba farmer in this connection ranges from $1.80 to $3.20 per acre per year.

Do you know that wheat is ripe in Manitoba about 18 days earlier than anywhere else; that oats are ripe from 10 to 20 days earlier; that barley is ripe from 11 to 22 days earlier? Do you see that this means the Manitoba crops are away to market before grain congestion clogs the transportation channels and while the market price is at the top?

Manitoba farming is farming under ideal natural conditions. No irrigation whatever. Yet the greatest rainfall comes after seeding, when it is most needed; it does not interfere with field preparations, the ripening process, or the harvesting.

The market opportunity for dairy and all manner of food products in Manitoba is made of money. The income that can be realized from ten or twenty cows in Manitoba is several times as large as the earning capacity of the average clerk or office employee. Manufactured creamery butter increased 1,000,000 lbs. in 1913, while the increase in milk consumed was nearly 3,000,000 lbs.; but there is no hope of the supply catching up to the demand in any branch of farming.

Rural telephones, good schools, the finest Agricultural College on the continent, the most progressive policy of agricultural instruction — these are a very few of the factors that point to MANITOBA as the proper location for your farm. Your opportunity lies in the fact that there is still plenty of room for thousands more, whether you are looking for improved lands at advantageous prices or for the free gift of a homestead.

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has been my right hand man for nine years and this year's experience will do him good. Next Monday we're off and no mistake. Whoop Nigger free!" And the foremost farmer of the county performed a dance that was a credit to a man who had the good fortune to be the husband of a restored wife and was an elder in the kirk.

All this took place some years ago. Brown is still spoken of as a born farmer. But he doesn't care as much as he used to for the title. He insists that there is health and money in taking an occasional trip. His wife is still requested to address Women's Institute meetings, but it is observed that she is at her best when she deals with some such theme as "A Woman's Duty to Herself." More than anyone else in the neighborhood, has she the way of getting into the confidence of newcomers, or of those who find it hard to get on.

An Inexpensive Ice-house

The value of ice on the farm in summer is realized only by those who have used it. In the keeping of food products, such as meat, milk, butter, etc., it is a valuable asset to good housekeeping. The reason that an ice-house is not found on more farms is the difficulty in securing good packing material. Good sawdust, which is the best packing material for ice, is impossible to secure in many districts. Cut straw or hay is better than nothing, but is very unsatisfactory where ice is stored in a building above ground.

On the farm of Geo. Clubb, Morris, Man., is an ice-house which is inexpensive, yet eminently satisfactory. A cellar 12 ft. long, 10 feet wide and 6 feet deep was dug. The walls and floor were boarded up and the ice stored inside. A storehouse was built over the basement and a close floor laid over the ice. The only opening from the storehouse to the ice is through a trap door and stairway. No sawdust is used, and the ice keeps well throughout the entire summer season. A small basin at one end gathers the water from the ice that melts and it can be pailed out when necessary. The building over the basement is only one thickness of inch lumber, but it is well sheltered in a bluff of Manitoba maple trees.

Initiative

The man who waits for opportunity, and when he sees it takes it, is not so good a man as he who does not wait, but makes it, says William A. Field. If I were asked what is lacking in the majority of men, I should say initiative, coupled with judgment. By the power of the former a man is impelled to do things and may make mistakes. On the other hand, his mistakes tend to cultivate judgment, and his earlier failures may be turned into stepping-stones to success. Many men fail because they fear to attempt.

The romance of the modern farm is one of the most engaging stories of modern development. The telephone, rural mail delivery, and machinery of almost human ingenuity, have lightened the task,—but no one has yet found a way to make the rigors of life in the open less dangerous. Exposure to cold, wind and rain while driving to market, attending to the stock in all weathers, working in damp places, or over-strain in harvest time, often result in sore and inflamed muscles, unfitting one for the duties which must be carried out. The pain and soreness persists and ordinary household methods of relief are unavailing. There is danger of the ailment becoming chronic. Many cases of troublesome rheumatism can be traced to these simple things, so easily dealt with at the start, when you use the right remedy. Dr. Thomas' Eclectric Oil, well rubbed in, acts like magic, in dispelling pain of this nature from any part of the body. It is remarkably effective for muscular rheumatism. It penetrates right to the inner seat of the trouble. The muscles become pliant without loss of strength by its use. Here is the simplest and least expensive of effective remedies. You cannot afford to be without it for a day, for you never know the minute you may need it. Have it ready. Save needless pain. Write Dr. Thomas' Eclectric Oil into your list of purchases next time you go to the store. It is known everywhere, used everywhere, sold everywhere. A days work saved by your foresight in having Dr. Thomas' Eclectric Oil always ready would pay you for its cost many times over. Never will you need it more than during the cold winter—get it now. Price 25 cents per bottle.

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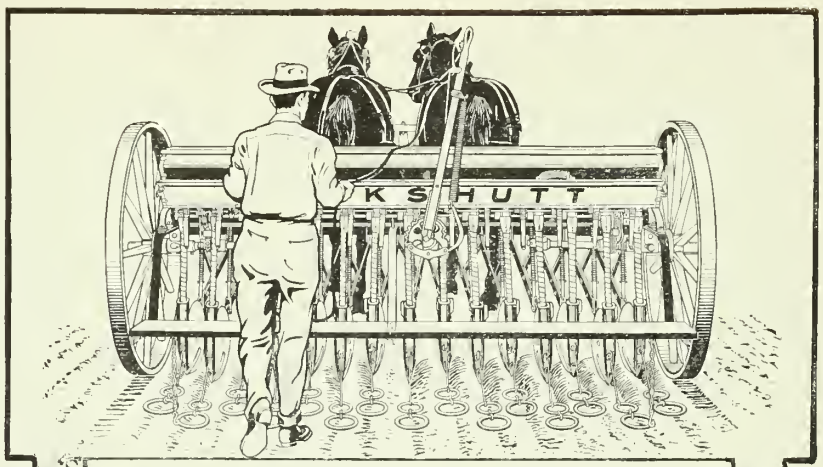

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FARMER'S MAGAZINE
143-149 UNIVERSITY AVENUE :: TORONTO

DOES your present income permit you to enjoy all the every-day luxuries, an occasional vacation trip, a new watch, bicycle, or possibly an extra fall suit?

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Read hieroglyphics down, and to the right.

(1) *As for her who desires beauty,*

(2) *She is wont to anoint her limbs with / oil of palm and / oil of olives.*

(3) *There cause to flourish these / ointments the skin.*

(4) *As for oil of palm / and oil of olives, / there is not their like for revivifying, making / sound and purifying the skin.*

This is a translation of the story of palm and olive oils written in the hieroglyphics of 3,000 years ago.

The characters and the translation are correctly shown according to the present-day knowledge of the subject.

A Beauty Secret
3,000 Years Old

The Egyptian maid of 3,000 years ago was famous for a perfect complexion—probably due to the use of olive oil in combination with oil of palm.

In the Homeric World, as depicted in the Iliad, olive oil was known as a luxury of the wealthy—an exotic product, prized chiefly for its value at the toilet.

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We get Palm Oil from Africa and Olive Oil from Spain. Our scientific combination, a perfect blend, has developed their utmost effectiveness.

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And Palmolive is one luxury that isn't high priced. A cake costs about 15 cents.

Palmolive

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THE FARMER'S MAGAZINE

March
1914

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Dr. J. P. Palling, the Celebrated Physician, says: "I have great pleasure in stating that I have been using Wilson's Invalids' Port for some time, and find it very beneficial as a tonic for invalids when recovering from any weakening diseases. It rapidly increases the strength and appetite.

J. P. Palling

235M

PALE WOMEN & CHILDREN

FEVER, LA GRIPPE

ATHLETE BUILDER

COUGHS, COLDS

NERVOUS DEBILITY, SLEEPLESSNESS

STOMACH TROUBLES, DYSPEPSIA

URIC ACID, RHEUMATISM, GOUT

BRAIN-WORRY NEURASTHENIA

WEAKNESS, RUN DOWN, ANAEMIA

WEAK LUNGS, TUBERCULOSIS

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It is one of the penalties of our modern life that Nature should be assisted judiciously at times, especially so in the hard months of the rough Canadian Winter, when, to resist the many ills to which one may be exposed, the system must be kept continually cleansed. When the liver shuts up shop and resistance becomes lowered sometimes to a dangerous degree, Parmelees Vegetable Pills quickly, gently and surely bring about effective results without purging away the natural secretions of the bowels. The dangerous poisons are eliminated, the system is agreeably and beneficially toned up and the body is fortified against the danger of ills that come when least expected. Constipation—that forerunner of perilous disease, is relieved without bad after-effects. Parmelees Pills are one of the best correctives known for biliousness. Experience has proved this. Sour stomach, gas, griping pains, sluggish liver and pains in the abdomen disappear.

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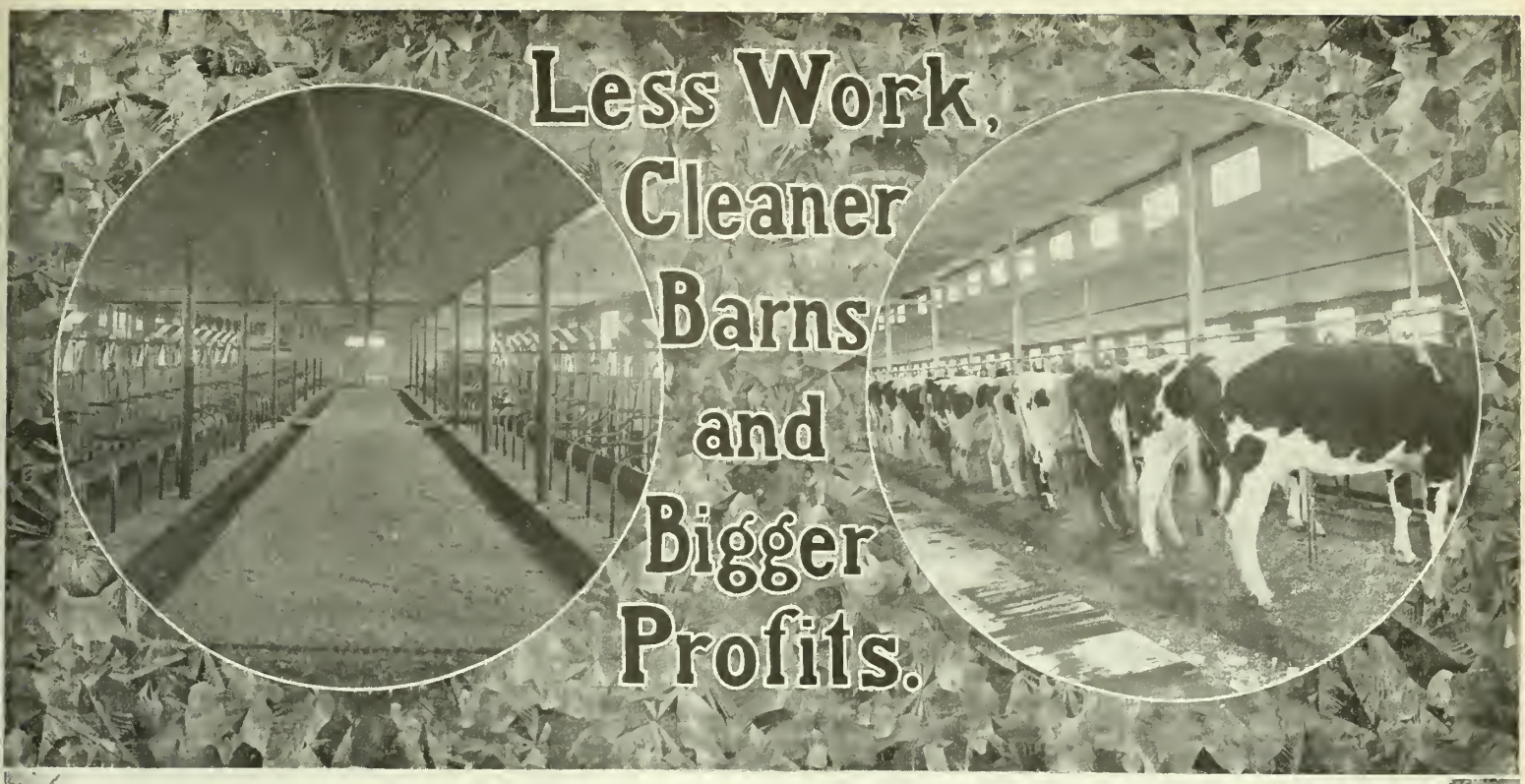

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BT Galvanized Steel Stalls, Stanchions, Bull Pens, Calf Pens, Steel Columns and other stable equipment have a dozen special advantages which enable you to get better results from your dairy cows at less cost and with less time and labor. Cows are healthier in a sanitary, steel-equipped barn; they give more and better milk, and you get better prices, both for your stock and dairy products. No more heavy losses from Tuberculosis; no more veterinary bills to pay. Equip your barn throughout with BT Sanitary Steel Stabling, for the investment will begin to pay big dividends from the very first day the cows are turned into the new barn.

Write to-day for illustrated book that shows BT Steel Stable Equipment in actual use in many fine barns, and just how it increases dairymen's profits. Learn how it saves so much time and annoyance in putting in the stabling, by coming ready to set up from the factory; how the whole job can be made ready for the cement in a single afternoon, simply by tightening up a few large bolts.

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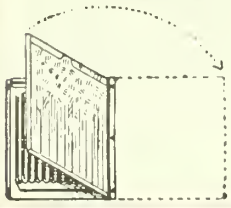

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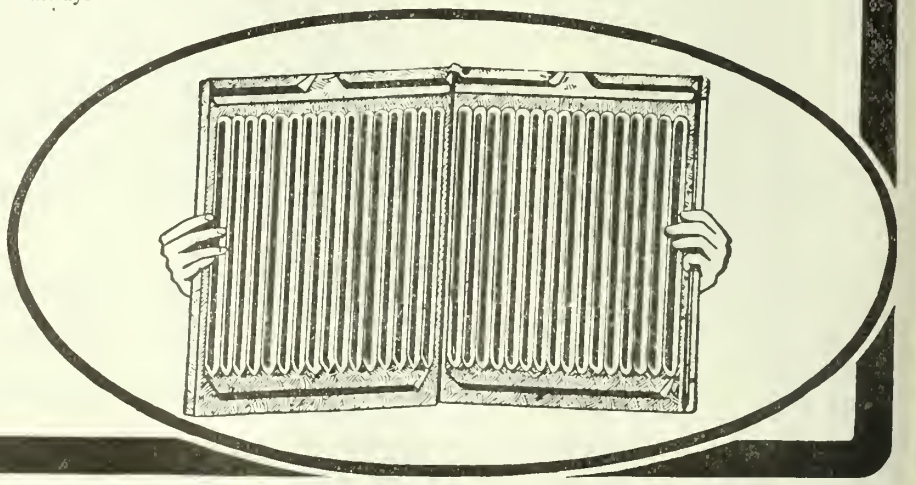

FARMER'S MAGAZINE

JOHN BAYNE MACLEAN, President
JOSEPH McGOEY, B.A., Manager
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MARCH, 1914

F. M. CHAPMAN, B.A., Man. Editor
ETHEL M. CHAPMAN, Assoc. Editor
J. I. CODDINGTON, Ph.B., Cir. Manager

A DIP INTO APRIL

Some Things About The Month Ahead.

The stories of farm successes in all parts of Canada are attracting much attention. The Pay Streak pans out very well, as one of the writers in this issue aptly states. That's the whole question in a nutshell—Does your farm pay? If not, why do you continue to farm like that? If you are thinking of going on to a farm, get the ideas that practical men have here written. What has been done can be re-done. These tales of farm life are no impossible fairy stories. They are solid facts. A young man, plus ideas, plus enthusiasm, will make the farm pay, and a paying farm means a contented farmer. That, in fact, is the mission of "Farmer's Magazine."

A big farm feeds 2,800 steers, and milks 187 cows in one year. It nets a profit of $50,000 where only a few years ago there was an annual deficit. A young man made the difference. It took the laying of 85,000 tiles in one year to do it. This makes better reading than a love story.

Canadians pay over $2,500,000 a year for ice-cream. The milk-powder factories and condenseries are forms of modern dairy manufacturing doing big things. Get this picturesque dairy story of Dean's.

In "The Mark of The Golden Hoof" a prominent farmer tells all about the handling of a small flock of sheep where the returns are so much found money.

A few more of the subjects handled are:—Dutch Belted Cattle, Hop Raising in B.C., Milking Shorthorn Revivals, Growing and Curing Hay, Woolly Aphids on Apples, House Building on the Farm, etc.

"Farmer's Magazine" is a guide post of Canadian Agricultural success. Its appearance in the home is always evidence that the reader is on the right trail.

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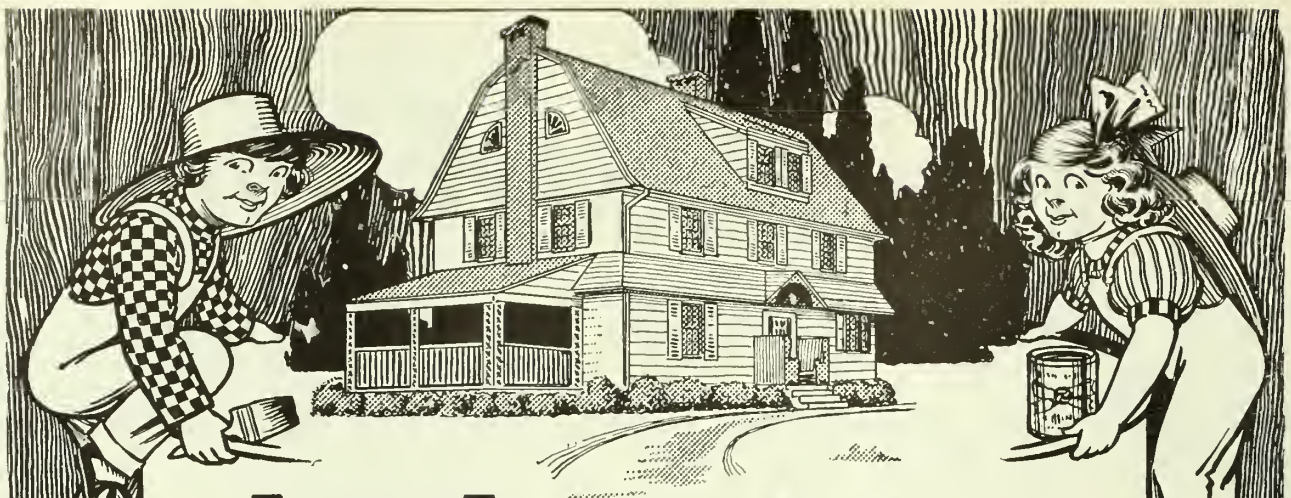

LIFE INSURANCE FOR YOUR HOUSE

A TREE often lives several hundred years. Nature has protected the wood by covering it with bark to shield it from the elements.

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The FARMER'S MAGAZINE

Vol. VII March, 1914 No. 5

The Friendliness of Alfalfa

Ontario's Veteran Grower Uncovers Some Fallacies in Regard to the Greatest of Forage Crops

By HENRY GLENDINNING

There are many opinions about alfalfa growing on Canadian farms. There has, perhaps, been no warmer advocate and no more experienced farmer with this admirable fodder plant, than the writer of this article whose farm, Rosebank, at Manilla is well known to many. Some farmers have reverted to red clover fields in preference to alfalfa. Others have condemned it unqualifiedly. Yet there are others whose testimonies in dollars and cents are too strong for any farmer to neglect. The experience of the Editor, both in the growing and in the feeding values of alfalfa, entirely agrees with the writer's. Never were livestock of all kinds, including hogs and poultry, kept more cheaply or in better physical condition than when under alfalfa feeding during the winter. The coming Spring must find many farmers considering the seeding question. To them this article is most timely.—Editor.

ABOUT 500 years before Christ the Persians invaded Greece and brought with them alfalfa seed, which was sown for the purpose of feeding their horses and cattle.

From Greece, alfalfa spread to Rome, following the conquering legions of Rome. The Roman colonist and farmer brought alfalfa to France, Spain, England and Germany. Probably Spain also received it through the Moors from North Africa.

The Arabic name alfalfa was adopted by the Spaniards, while the name Lucerne was taken from a river valley in Northern Italy and was applied by the people of France, England, Germany and most of the European countries and up to a few years ago by all of the States east of Utah, as well as Canada, but the name alfalfa has now superseded that of Lucerne in nearly all sections of the United States and Canada.

It was brought to America in two ways. It was brought by the Spaniards to Mexico, Peru, Chili, Argentina; from Mexico to Texas and California in 1851 which marked the beginning of the great alfalfa-growing industry of America.

Lack of Lime

The other source was the bringing of Lucerne seed in the 18th century from England, France, and Germany to the Eastern States, where it was grown to some extent in the States of Virginia, New York and North Carolina. Here it did not meet with much success, owing to the lack of lime in the soils of these States. It met with considerable success in California from where it spread eastward to the states of Utah, Colorado, Kansas, and Nebraska, where it has had its greatest success in the alkaline soils of these States that are full of carbonate of lime. The dry soils of many of these States where the water content is controlled by irrigation is a contributing factor.

In 1871 the late Nehemiah Bethel, a farmer who lived near Thorold in Welland County, Ont., obtained two pounds of alfalfa seed from Lorraine, France.

This he sowed with great care. From seed which he grew he increased his acreage from year to year so that in 1877 he had 70 bushels of seed from a little less than ten acres of land.

In 1875 Dr. J. W. Colver, of Wellandport, Lincoln County, Ontario, imported fifty pounds of alfalfa seed from Baden, Germany, part of which he sowed himself and the balance he divided with farmers who sowed it in the south-western part of the Province. The growing of alfalfa made slow progress up to five or seven years ago. Since that time the acreage has been large and would have been much greater if farmers could have obtained seed at seeding time. The reason for its slow expansion during the early years of its introduction can be traced to three causes:

Lack of knowledge how to grow it properly.

Alberta may prove to be one of the greatest Alfalfa seed-producing countries in the world.

Lack of proper drainage.

Lack of the proper bacteria in the soil for gathering nitrogen from the atmosphere.

When alfalfa was first introduced it was spoken of as the greatest pasture plant ever introduced into Canada. This statement was only a partial truth, not casting any reflections upon the men who made this statement. It is true that it makes one of the most succulent, palatable, and nutritious pastures, and it makes a rapid growth after being cut or eaten off, but it fails in the essential requisite of a good pasture plant to stand close cropping and tramping by stock. The majority of the growers of alfalfa during those first years of experimental work followed the advice given in regard to pasturing. They would cut two or perhaps three crops of hay from the fields the second year after seeding and if there was a good aftermath they would turn their stock on the fields to pasture, which was often eaten off bare. The result was that the most of the plants would be dead the following spring.

As to the second cause, many farmers sowed alfalfa seed upon fields that require drainage, as they did not know that alfalfa will not succeed upon land that has a cold, wet, sour subsoil.

Lack of the proper bacteria in the soil for the purpose of extracting the full nitrogen from the atmosphere which is converted by the agency of these bacteria into nitrates, and which enable the plant to make use of this most valuable of fertilizers for the building up of the leaves, stems and roots, has accounted for many more failures. On account of the absence of these bacteria the plant grows spindling, with few leaves and these leaves are of a sickly yellow color. If the soil is not well filled with nitrogenous fertilizers, such as barnyard manure, the plants die out about the second year.

Essentials of a Good Crop

The essentials for a successful crop of alfalfa are a deep dry soil well filled with humus and lime, sufficiently rolling to carry off surface water, thus preventing forming of ice in the winter time around the crowns of the plants, plenty of barnyard manure, the soil well filled with lime, the proper bacteria and a soil free from weeds.

Alfalfa will grow on a very wide range of soils from a stiff clay to light sand, but will do best on a good clay loam with open subsoil free from dead water to a depth of eight or ten feet, so as to permit the air and rain to pass readily down along with the roots. All lands are not naturally adapted for the growing of alfalfa but much that is naturally unfit can be made to grow profitable crops of this plant. While alfalfa delights in a soil that is free from dead water to a depth of eight or ten feet or even more, by tile draining to a depth of three feet and having the drains close enough to carry the water off quickly, alfalfa can be made to grow well.

Much of our soil in Canada is composed of glacial drift and is well filled with lime. If the soil lacks lime it will be apparent by the weak sickly alfalfa plants. This can be remedied by spreading ground limestone, slacked lime or marl from the many marl beds that are found in Canada at the rate of 1,000 or 2,000 pounds per acre. There is no fertilizer that excels barnyard manure for alfalfa, as it contains all the elements of fertility for plant production. The strong roots of alfalfa go deep into the soil in search of water and plant food.

The three principal elements of fertility besides lime used by plants are potash, phosphoric acid and nitrogen.

ALFALFA JAMES NOW!

Coburn of Kansas and Joe Wing of Ohio have been preaching alfalfa in the United States for years. Their preaching has borne much fruit, for alfalfa is now making United States farmers millions of dollars.

Canada has had no more earnest advocate of alfalfa than Henry Glendinning, the veteran farmer of Ontario County.

Now comes C. C. James of Ottawa with his romantic words advocating alfalfa instead of wheat.

Long live Alfalfa. Once its roots gets twined around a man's farm, the day of poverty is past.

Alfalfa one year old, 7 ft. 10½ in. long from top to end of roots.

A leaching process has been going on for thousands of years and much of the fertility of the soil has been carried down by the rains and melting snow below the reach of the shallow-rooted plants such as the grains and grasses, but the deep roots of the clovers, and especially alfalfa go down and bring back and make use of these elements of fertility that were carried beyond the reach of the more shallow-rooted plants. The elements of fertility which are taken up by these deep roots and made use of to build up the leaves, stems and roots of the alfalfa plant, when fed to stock on the farm and the manure returned to the land, give us practically the manure of two farms to apply on the surface of one.

Most of the clay soils of Canada are abundantly filled with potash for the growth of alfalfa, so that we do not require to give that subject much attention.

Phosphoric acid is not so abundant in the soil as potash and it is carried off the soil in the sale of grain, fruit, milk, wool and animals. It has not been applied in a commercial way to any great extent by the farmers of Canada but there is no doubt but it could be applied with benefit to growing alfalfa in many Canadian farms.

Nitrogen is the most valuable of all the elements of fertility, the one most sought after and the one of which our soils become most readily depleted, and which gives us the dark green and vigorous foliage. We apply nitrogen to our soils by the application of barnyard manure which gives the soil a dark color.

Bacteria are Lackeys of Clover

Other sources of nitrogen than barnyard manure are found in decayed vegetable and animal matter. About four-fifths of our atmosphere consists of nitrogen, but our common grasses and grains, such as timothy, wheat, barley, oats and corn have not the power of making use of the free nitrogen in the air. All soils free from dead water contain air. Through the agency of certain kinds of bacteria this free nitrogen is made use of by the alfalfa plant. These bacteria are very minute plants. It would take 5,000 placed in a row close together to measure an inch in length. They can only be seen by the aid of a powerful microscope. We can see their work if we examine the roots of a vigorous alfalfa plant, on which will be formed nodules or tubercles strung along the roots of the plants. These nodules are colonies of bacteria and their numbers on the roots of a single plant amount to many millions. The supply of nitrogen is inexhaustible as the air consists of nearly 80 per cent. of nitrogen. The leaves have no power to take up this free nitrogen from the air and use it as a plant food. The alfalfa plant has the power of making use of this free nitrogen by the action of the bacteria that are on the roots of the plants. Their action is not fully understood, in some way they digest nitrogen and assimilate it so that the plant can make use of it as a food.

(Continued on page 84.)

Uncultivated corn at the left; the cultivated rows at the right.

Why Cultivate Corn?

Experiments in the Corn Sections of the States Reverse Some of Our Beliefs

By GEORGE H. DACY

IT COSTS millions of dollars in labor and time to cultivate the annual corn crop of the universe. Does it pay? Does the farmer realize a larger yield in consequence of his intensive tillage operations? Does he efficiently control pestilent weeds? Does he conserve soil moisture and gain the maximum efficiency from the rainfall in consequence of up-to-the-minute activities in the corn-plowing line during the early growing season? Would not the corn yield of grain and fodder be just as high where the crop was produced under non-tilled conditions as where so much labor and money are spent in maintaining the seed-bed in a mulched condition?

Corn as it appears on an uncultivated piece of land.

This article will look like heresy to many a Canadian. We have grown our corn generally on our poorest and dirtiest fields, in order primarily to clear the land. Also it must be noted that we have put plenty of barnyard manure in the field during the previous winter or early spring from which many weed seeds are brought to the top soil. This all means that Canadian farmers must cultivate the soil to kill the weeds, and secondly to assist nitrification in the soil by this constant stirring. In this article, the rich productive black soils of the central States are used in the experiments. They may be conclusive but it will take much more illustration to convince us of this under Canadian conditions. Cultivation is so easy a method of weed destruction that until we plant our corn on rich clean fields, little chance will be given to try this out. However, the article is valuable in that it directs our attention to the real reason of operations on the farm, too many of which are taken by farmers as heirlooms from a family practice.—Editor.

Radical, senseless questions perhaps you think them. Mayhap you and your father and your father's father have grown corn for scores of years with never a thought as to why you so conscientiously and thoroughly cultivated your fields of corn during the early growing period. If you are an accomplished corn farmer you probably emphasize cultivation as one of the fundamentals of profitable corn cropping. In fact, countrymen the world over have during modern times attributed the increased yields to such factors as intensive cultivation, deep plowing, the preparation of a seed-bed of uniform texture and the use of pure-bred seed corn. Particularly have they placed stress upon exhaustive tillage of the growing crop as an inducer of bumper yields. Yet if one will take the time and trouble to investigate the proposition he will ascertain that, aside from controlling weeds, intensive cultivation is of no benefit to the growing crop. In fact, it might be classed as detrimental to the corn crop were it not that the thorough tillage spells death to the weeds.

Grandfather's way was to cultivate the corn crop with a forked stick, a

How the corn looks where the ground is cultivated.

The ears at the extreme left came from cultivated rows, the next pile from uncultivated, and so on.

wooden plow or a makeshift iron plow. During father's time the tillage implements were measurably improved and perfected, and he cultivated his corn with less labor and at less expense. And now to-day father's son is pursuing the same method. And for why? To control weeds—yes—but could he not accomplish the same end in some less costly manner? To conserve soil moisture by preserving a mulch over the surface of the corn fields—yes—but a mulch formed by a dense matting of plant roots in the surface three or four inches of soil would less expensively and just as efficiently effect the same object. To improve the tilth and mechanical condition of the soil—yes—but this could be accomplished by a more thorough and efficient preparation of the seed-bed. Reduced to a fundamental basis intensive cultivation controls weeds. That is all. And it does not eradicate the weeds as efficiently as it might.

Think what it would mean in dollars and cents to the farmers who grow corn if they could reduce the expense of producing the crop several dollars per acre. If a saving of but five cents per bushel was made in the cost of producing the 1912 corn crop United States farmers would be about $1,562,500 the richer at the present time. Cultivation is one of the most expensive operations in the production of corn, and it is one of the features that has received the least study. About seven years ago Uncle Sam got tired of seeing his farmers devoting so much of their time to plowing corn, so he began investigations as to the value of intensive cultivation. Right at the offset he bumped up against a basic principle, a silk-stockinged law known as the soil-mulch theory. This mandate features the conservation of soil moisture by maintaining the top portion of the soil in a finely-divided condition and the promotion of rapid nitrification by the frequent stirring of the soil. Furthermore, practical application of the theory has demonstrated that frequent shallow cultivations of corn produce better yields than other methods of tillage.

However, incredulous, Uncle Sam went at the problem with a "show me" chip on his shoulder. Immediately he got busy, and with the assistance of the Bureau of Plant Industry and many of the State experiment stations as well as many practical farmers, the majority of whom were agricultural school graduates, he began a brass-tack investigation of the weed-factor problem in the cultivation of corn. Uncle Sam records the results of 125 different field experiments conducted over a six-year period in twenty-eight States. As weed control is a fundamental problem in tillage philosophy, all these tests featured a comparison of the relative yields of corn produced by supposedly optimun culti-

The first shook to the right is from an uncultivated field; the second from a cultivated field, and so on through the group.

vation as contrasted with mere weed elimination.

All these experiments irrevocably showed that cultivation is not beneficial to the corn plant except in so far as removing the weeds is concerned. The tests were made in each instance by having two plats or sets of plats, one of which received no cultivation after planting, the weeds being kept down by the horizontal stroke of a sharp hoe at the surface of the soil, special care being exercised not to disturb the soil or to form a soil mulch. The second plat was accorded the usual number of cultivations such as are practiced on the average corn farm. The results show that the weeded plats produced 95.1 per cent. as much fodder and 99.108 per cent. as much grain as did the cultivated ones. If there was any difference between either sets of plats as regards thoroughness in keeping down the weeds it was in favor of the cultivated areas. According to the experts who conducted these experiments weed control is the primary object of cultivation and may be effected either by the use of special tillage implements designed for that particular purpose or by the pursuit of cropping systems that feature weed eradication.

The measure of the relative merits of cultivation as compared with non-cultivation in these experiements of Uncle Sam's has been, not in the conservation of soil moisture, or the effect on nitrification, or the making available of plant nutrients, but the relative yields of corn produced. The tests were carried out with a view to practical, commercial production. In computing the results the yields of the uncultivated but weeded plats have been expressed in percentages of the cultivated areas, both for fodder and grain. The experiments were conducted over a wide range of soils and climatic conditions. The directions sent out by the Department of Agriculture when the trials were begun in 1906 said, "A plot of land of uniform productivity must be used in every case; preparation for planting must be made by thoroughly breaking and harrowing the soil to a fine stage of tilth; all the planting must be done by drilling in the seed on level land. Ridges must not be used."

The size of the plats was left to the pleasure of the co-operator although for the most part the plats consisted of five rows each, the rows being respectively about two hundred and fifty feet in length. Subsequent to planting one of the plats was accorded no cultivation

Loading the bundles of corn dropped by the corn-binder, on the farm of the Veterinary-General in Vancouver.

Boys judging corn at Ontario Corn Show, Chatham.

although the weeds and grasses were removed at frequent intervals by means of a sharp hoe. This hoe was used with a horizontal stroke to cut off the vegetation at the soil surface without needlessly stirring the soil. The other plat was frequently cultivated while the weeds and grasses were also eliminated by chopping as often as was necessary. Previous to 1906 but little experimental work of this nature had been attempted. Twenty years previous the New York station attempted somewhat similar tests and reported at their conclusion that "cultivation is not beneficial to the corn plant except as far as removing the weeds is concerned. During the existence of this station we have been unable to obtain decisive evidence in favor of cultivation."

From 1888 to 1893 the Illinois station conducted like experiments with analagous results while about the same time the Missouri and Utah stations obtained identical results which corroborated those of New York. At the Geneva station 56.8 bushels of corn per acre were produced on the cultivated plat while the untilled plat yielded 70.5 bushels per acre. For seven successive years at the Illinois station the cultivated plats produced respectively 93.8, 84.6, 66.8, 58.4, 70.1, 36.3 and 85.5 bushels per acre as compared with the uncultivated plats that yielded respectively 90, 77.1, 69.1, 55.3, 76.8, 28.7 and 87 bushels of corn. The Missouri and South Carolina as well as the Utah results were quite similar.

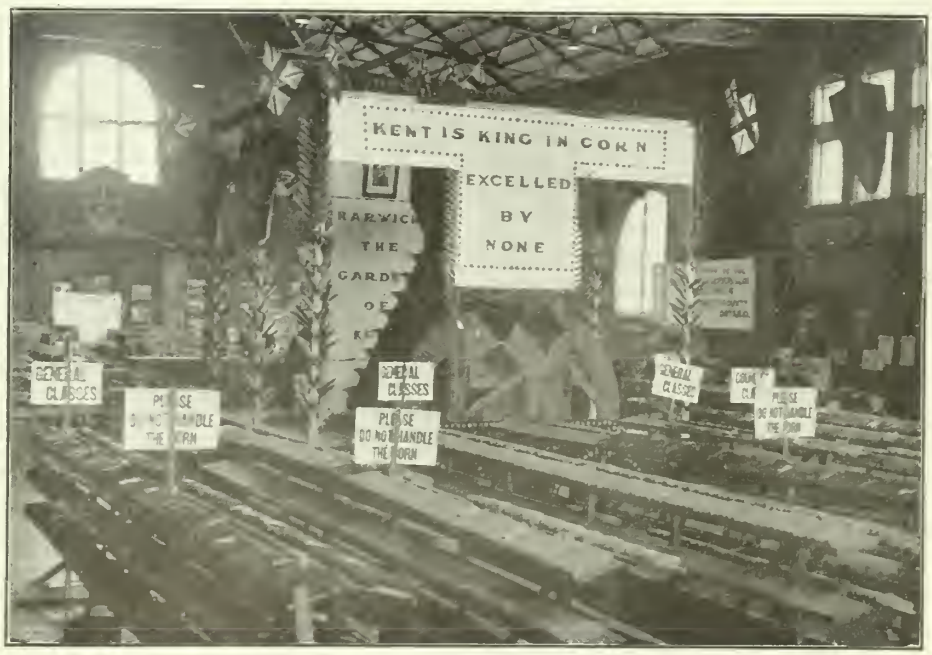
What U.S. Corn Growers Report

The data collected during the last six years merely affirm these results. Recently at the New Hampshire station on the cultivated plats 1,960 pounds of fodder and 23.3 bushels of grain resulted per acre while on the uncultivated plats the yield of fodder amounted to 2,190 pounds while the grain totaled 33 bushels to the acre. A Maryland farmer reports a grain yield of 65.3 bushels on the cultivated and 71.3 bushels per acre on the uncultivated plats. An Indiana farmer grew 48.1 bushels of corn per acre on the cultivated area while he produced 65.65 bushels per acre on the nontilled land. A Missouri countryman made 52.2 bushels per acre on the cultivated plat while he raised 64.57 bushels to the acre on the uncultivated piece of land. A Georgia farmer reports that his yield of uncultivated corn as expressed as percentage of cultivated corn amounted to 138.8. On the other hand a Virginian grew 48.9 bushels per acre on the cultivated plat as compared with 40.3 bushels on the uncultivated portion of the field. The average of 125 tests shows a yield of 4,039 pounds of fodder and 51.27 bushels of corn per acre for the cultivated plats as compared with 3,784 pounds of fodder and 47.67 bushels of grain on the uncultivated areas.

Evidence as to the maturing qualities of the corn show that 57.4 per cent. of all the corn ripened at the same time while of the remainder about 28 per cent. demonstrated that the uncultivated plats matured the grain the sooner while the other 14.6 per cent. indicated that the cultivated plats produced the earlier grain. As a rule the results indicated that when for any reason the uncultivated plat fell below the cultivated plat in yield that the uncultivated corn showed a tendency to mature earlier than did the cultivated corn. Furthermore all the data indicated that rainfall and the type and character of the soil entered but slightly into the problem. The range of annual precipitation varied from sixteen inches, the lowest, to sixty-one inches, the maximum while the soil types covered every variety of land upon which corn is grown in America.

Peculiarly enough, on certain soils the weeds ceased growing sooner on the uncultivated plats than on the cultivated areas where the number of hoeings and cultivations respectively were the same. In consequence at harvest time the former land was relatively free of weeds while the latter soil was more or less weedy. In all cases the weeds on the uncultivated plats or this experiment started growing immediately after planting to about the same extent as they did on the cultivated areas. However as the season advanced and the weed seeds in the surface inch or two of soil germinated and the seedlings were destroyed, the weed growth became gradually less while on the cultivated plats the weeds continued to thrive throughout the entire season. In explanation of this phenomenon the agriculturists who conducted the experiments say, "This may be due to the condition of the soil on the uncultivated plats discouraging germination of weed seeds beneath the surface inch or two and the inability of the seedlings to push up through the hard crust, whereas on the cultivated plats the friable surface soil permitted the seedlings to push up from a considerable depth and the tillage implements were constantly bringing up weed seeds into the surface soil where conditions were more conducive to germination. In the case of soils of the loose, deep, moist character the weed growth on the two sets of plats was about the same throughout the season."

Whether or not it is desirable to discourage the germination of weed seeds is a debatable question. From one standpoint a person might argue that it was



Some of the exhibits at the Ontario Corn Show, Chatham.

preferable to induce the germination of as many weed seeds as possible as then the seedlings could be readily killed in the subsequent cultivation. From another viewpoint it may be said that on the non-tilled plats although a much smaller proportion of the seeds were induced to germinate many of those that remained ungerminated probably lost their viability which indicated a smaller number of weeds and less seed to infest the land. It may be safely stated that for the years in which the land is in cultivated crops the work of weed control may be considerably simplified by shallow rather than deep working of the soil.

The conclusions to be drawn from these extensive experiments are contrary to the accepted teaching on these points. The tests show that cultivation is of value only as a source of weed control. Where weeds are kept down by some other method cultivation would be useless. Everyone admits that when land is maintained in a fallow condition that a soil mulch tends to preserve the moisture in the soil. Is it not feasible that when the soil is fully occupied by the roots of a growing crop that similar moisture-conserving conditions prevail? Water drawn from the lower levels by capillary action would have to thread its way through a maze of thirsty roots all eager for a drink. In such a case the roots would play the role of a soil mulch. Under such conditions cultivation would be futile and even injurious as it would reduce the number of roots in the soil surface. Furthermore the presence of the mat-work of roots in the soil would not impede the passage of rain down through the soil as the roots would only be able to absorb a certain amount of water while the surplus would pass to the lower levels.

A rainfall too light to moisten the soil below the depth of stirring would be valueless on cultivated land as it would not penetrate to the roots of the crop. On the weeded land there would be enough roots in the surface inches of soil to absorb a large part of even so light a rainfall before it had an opportunity to evaporate. Even though the loss of moisture by evaporation was larger on the uncultivated than on the cultivated plats would not this apparent waste in the long run prove to be beneficial in so far as a larger amount of nitrates and other soluble salts would be brought up from the deeper layers of soil to the surface where they would furnish an increased supply of food for the corn roots?

If the foregoing results are wholly accurate, corn-growers of the future will produce their crop at a lower cost. They doubtless, will pursue different methods of management to eliminate weed pests from the farms. They will have to fight the persistent, perennial weeds such as Johnson grass, quack-grass, Bermuda grass, wild morning-glory, Canada thistle, wild onion and horse nettle. They will have to combat the biennial and annual weeds which are bothersome largely due to their prolific seed habits. This is best accomplished by preventing the weeds from going to seed. The present tillage implements are designed primarily to produce a mulch and stir the ground. Implements of special design and purpose are required whose principal function will be the killing out of weeds. An efficient variety of weeding machine is needed for such work. In addition many farmers will have to modify and type their rotations to feature the control and eradication of weeds. In some portions of the South weeds are minimized or eradicated by the intensive practice of a one-year rotation of corn and crimson clover. Under such management the farmers cultivate the corn but once and still secure a good yield. One Kentucky farmer recently broke a piece of sod-land that was free of everything except clover and timothy. He sowed the field to corn and as no weeds were present he did not cultivate the crop. The corn yielded a bumper crop of seventy bushels to the acre. Other farmers can do likewise. Each countryman will have to adapt his methods of corn culture to his local conditions.

How the Pay-streak Pans Out

What the Early Vegetable Industry Did for the Value of Leamington Sand

By JUSTUS MILLER

In the February issue of Farmer's Magazine, We had an article dealing with the methods adopted and the profits derived from gardening under glass in the Leamington district. In this article Mr. Miller goes further to show how the all-year early vegetable industry not only brings in abundant annual returns but has increased the value of the land from twenty-five to forty times the price paid for it a few years ago. Especially worthy of note is the importance which the writer attaches to giving Nature a square deal in feeding the soil; the figures are convincing.—Editor.

WHEN A farmer named J. L. Hilborn grew weary of corn and hogs, a faint, purple glow broke in the eastern sky at Leamington. He decided to capitalize two factors that were quite common and fairly cheap—land and climate. When he built a small greenhouse the purple turned to red. Now the sun of the fruit and vegetable industry is shining in a clear sky.

The farmers on the strip of sandy soil bordering the lake-shore were not slow to heed a promise of greater possibilities from their hungry land. Hence the new industry was given a welcoming hand.

"The crops particularly adapted to this land," declared Mr. Bradford, president of the newly organized Growers' Co-operative Association, "are early tomatoes, melons, cabbages, and peppers. Peaches are a paying crop, but they are uncertain. I have had my trees entirely winter-killed twice. Then we have to fight the scale constantly. We manage to keep it under control, but no orchard in this district is entirely free of it, I think. So I don't expect to see the peach business expand much down here.

Peaches thrive at Leamington until a hard winter comes.

"Pears will be a profitable crop too, when someone devises a way to destroy the blight without destroying the trees as well. There are very few pear orchards left in this district at all because of it.

"But we aren't complaining very much because we are held up with these fruits. There is more money and more profit from tomatoes and melons than from either.

"One grower down here, John Atkinson by name, sold $3,500 worth of peaches off four acres one year and people thought we had struck a Bonanza for sure. But the same man has taken $1,460 worth of tomatoes from one acre of the same farm. Of course, these figures represent gross receipts in each case. It just goes to show how far some land boomers stray from the paved road when they howl themselves hoarse over peaches."

Mr. Bradford then undertook to demonstrate to me the possibilities of the

What the little red tomato has built.

district. He very kindly showed me over his farm, which he assured me was quite typical of the limited district where the early fruit industry flourishes.

"A few years ago you would have seen a vastly different-looking land," he told me. "The soil is of a light, sandy nature that requires a great deal of fertilizer to grow field crops successfully. It was known as a hungry soil, although by reason of location it was good corn land. The prices ranged from $25 to $40 an acre, and everyone wasn't in a hurry to buy always at that. The sand belt only extends from the lakeshore to the town of Leamington. Farther back it is a clay, not adapted to vegetable growing. The fellows back there are still wondering why they didn't get a little land along the front, although I must say they are doing very well too at the tobacco game.

"We have just started a new industry now—the all-year early tomato business. By this system we will grow tomatoes in green-houses during the winter. But a great source of wealth will always be the field culture of tomatoes and melons. These two crops have been the mortgage-lifters of the Leamington fruit district."

An Annual Feast of Vetch

Mr. Bradford owns forty acres, but does not set the whole farm to vegetables. Each fall some eight or nine acres are sowed with vetch, which is allowed to grow the following season and is plowed under. He has also a small peach orchard, and eventually will have a couple of acres under glass. But all the remaining acres are planted with tomatoes and melons, with small areas of cabbages and peppers.

"All our seedlings for outside planting are grown in the greenhouses between the inside tomato and lettuce crops. The tomato seeds are planted about the first of March in trays twelve by twenty-four inches in size. We use any kind of sand at all for this work that will hold moisture; clear lake sand has given good results. In twenty days we transplant into other flats, thinning to twenty-four plants to a tray. If they grow too quickly we move to about eighteen per tray. Finally they are transplanted again to eight per tray and about the 15th of May we set them out.

"We plant them in rows five feet apart with the plants four feet in the row. I know that some others prefer them farther apart as they can cultivate them longer, but I am satisfied with this distance."

Why the Pay-Streak Holds Out

Mr. Bradford has taken many a chance upon markets and crops. Every farmer and fruit grower does that. They are all gamblers in the big world's market house. But he is an honest gambler. Some men, you know, are straight to the world, but they try to cheat old Mother Nature. I say they "try," for no one has ever done it yet. She gets them all in the end, or their children or their neighbors and squeezes them dry when the page is finished. Mr. Bradford knows that his sandy soil will throw out tomatoes and melons only so long as he throws in the elements to make them.

So we find a very careful system of fertilization being carried on at Tintagel, the name of the homestead. The same treatment is given all the soil, irrespective of the nature of the crop grown.

In the fall the land is plowed and rye is planted. This makes a root system and holds any snow that falls. The following spring it is worked up and then ten tons of well-rotted farmyard manure are applied. This is supplemented later by 250 pounds of potash and from 300 to 500 pounds of bone phosphate.

"We unsually plant about seven acres of tomatoes upon soil prepared in this manner," Mr. Bradford told me. "Last year from this acreage we picked 4,500 baskets. The price early in the season hangs around $2.00, but when the other fruit districts begin to ship it will drop to 25 cents or below. We never ship at a price lower than 20 cents. That is our margin. Altogether last year I averaged a net profit of 45 cents on the 4,500 bushels.

"Of course the great advantage here is the earliness of the season. We are from ten days to two weeks in advance of any other district and we have no difficulty in shipping our earlier stuff. After that the produce hangs sometimes, while upon some occasions the market is glutted. Our co-operative society has helped us out wonderfully this year however."

While the young tomato plants are still in the greenhouse the melon seeds are planted in flats, just as are the tomatoes. When the tomatoes are put in the ground the melons are transplanted, eight to a tray. They are planted out about the 10th of June.

They are planted in rows about six feet apart with the plants three and a half in the row. As in the case with the tomatoes they are cultivated until the vines become too large.

"I grow only canteloupes and prefer the Hoodo variety," said Mr. Bradford. "They are better yielders, good shippers, are salmon fleshed and have an excellent flavor. We sell them in fifteen-quart baskets. Early in the season we receive F.O.B. about $1.25 a basket. The lowest sale last year was at 48 cents. The earlier ones are ready for market about August 1st. We make a net profit usually of from about $175 to $200 an acre. One or two years, though, weather conditions were such that we practically had crop failures."

About an acre of cabbages are set out on this farm. They pay well, but the demand is limited. Usually just enough have been grown by the Leamington men to fill the orders of regular customers who were buying other lines of produce.

The seeds are planted during the last week of February. They are thinned by transplanting in flats a couple of times and are placed in the field about April 15th. They are ready to sell about June 24th. They are sold in bushel baskets and bring about $1.25 to $1.50 net. There are about twenty-five cabbages in a bushel and some four hundred bushels to the acre.

The $1,000 land in winter.

"The pepper business is a hummer if I could only sell all the peppers I could grow," remarked the Leamington grower. "Unfortunately there is a comparatively small demand. But the prices are good and the yields are astonishing.

"I plant the seed the last of March and replant to about forty in a flat, when they have grown a little. After all danger of frost is over, I plant them in the field in very rich soil. They are put in rows two and a half feet apart with the plants two feet apart, and I have them cultivated every week. They bear continuously throughout the season and I have picked four bushels a row from rows eighteen rods long. This year the price wasn't good, and they went at sixty cents a basket. From one-quarter acre I picked one thousand baskets and netted about 25 cents a basket. $250 net from one-quarter acre sounds a little dubious doesn't it, but it is a conservative figure.

"However, the pepper business can be very easily overdone. The demand is limited as I said before. Not many persons are apt to grow them, though, as artificial watering is necessary to secure a good crop. My crop would never have borne a pepper last year if it hadn't been for my Skinner Irrigation System."

Holding the Sprinkling Can

Now there are various ways of giving plants a drink. The way that the Old Mother adopts every time we go driving without an umbrella is well known to all. The unseen pumps in the soil that force water upward to the roots from the ground water-table by capillary action is still more efficient. A knowledge of soil composition and requirements will enable a person to greatly assist nature in these two operations, but even then very often the supply is deficient. For plants are very thirsty little people, and an acre of any kind of crop will consume tons and tons of water in a season.

Wherefore Mere Man grew tired presently, and built waterworks systems of his own that were less dependent upon the soil and not at all dependent upon the clouds—at least directly. Mr. Bradford has built himself a big sprinkling can known as the Skinner Irrigation System which works very well indeed.

"I purpose some day to extend it to every part of my farm," he exclaimed. "I know it is costly, but it pays for itself every time down here. It is composed of pipes supported by poles about eight feet high. Nozzles are placed every four feet along the pipes and the water is thrown twenty-five feet. Therefore the pipes must be fifty feet apart. It has cost me $150 an acre. I intend to build two more acres this coming season."

His land is situated directly along the lake front, about seventy feet above water level. In a small house on the beach he has installed an eight horse-power gasoline engine. At a pressure of from thirty-five to forty pounds the system works very satisfactorily. The farthest nozzle at present is one thousand feet from the edge of the cliff. Mr. Bradford considers that the sooner he extends the system over his whole farm the more money he will be ahead. Another grower nearby is constructing an overhead irrigation system, and others will soon follow, Mr. Bradford predicts.

DOES IT PAY AT $1,000?

Let us value the farm of forty acres under consideration at $40,000. *Mr. Bradford will clear, he states, above operating expenses,* $5,500. *Interest at* 6 *per cent. on investment equals* $2,400; *interest on labor cost at* $2,000 *at* 6 *per cent. equals* $120; *depreciation on buildings valued at* $10,000, *equals* $400. *Hence total interest and depreciation equals* $2,920, *or to make a rapid calculation,* $3,000. *Hence the net gain on the business equals* $2,000 *or just* 5 *per cent. of estimated value of land and buildings at* $1,000 *an acre.*

These figures tend to show that the land is capitalized at the limit. If the price is raised some method will be necessary to increase returns also.

So if you go to Leamington to talk marketing of crops we will meet many friends. But to have a real good time talk land values. Best of all, every claim along this pay-streak of Lake Erie is a sure producer of the wealth that has made it famous.

Strengthening the Weak Link

"But the question of growing produce has not caused us so much worry as the one of selling it to advantage," continued Mr. Bradford. "Until lately we have been selling through commission men. After we paid the express and a ten per cent. commission and cartage, there was not a very large share left for us. By the way, I've often wondered where that cartage item came in. Every time a shipment of tomatoes went to Toronto we paid one cent a basket cartage. I have never quite figured that out yet.

"However, we have got the market problem cinched now. Last spring sixteen of us organized a co-operative society. We talked it up all winter at the meetings of a little social club we've formed called the Jolly Old Folks' Club, which was organized by Mrs. E. M. Bee about five years ago, and has flourished ever since.

"After we got the idea working in the heads of the members we instituted a personal canvass and succeeded in forming a limited joint stock company, capitalized at $40,000, chartered under the Ontario Companies Act. We issued sixteen shares on a $100 basis, 25 per cent. paid in. Each member was limited to one share and one vote. More want to come in this year. We could easily double our number, but we have about one thousand acres controlled by members now. This first year we have done a $60,000 business, and that is about all our management can handle. After a while we shall feel more confident about expanding.

"Our first step was to hire a competent manager. We secured him in the person of P. Falkenbridge, who had handled a large association at Grimsby for four years. We agreed upon an initial salary of $1,700, and we have all been satisfied.

"The members agreed to take ninety per cent. of the proceeds from sales. The other ten per cent. was used in management and as a reserve. We have not yet built any buildings, but will erect a shipping house at the express station this season.

"I may say that we have had no disloyalty to contend with. Indeed, we have had a most successful season. When the neighboring growers were shipping tomatoes to Toronto to commission men at twenty-three cents a basket, we were sending carload lots to the North-West at twenty-three cents f.o.b. That means they really sold at about ten cents, whereas we received the twenty-three. Throughout the season we were paid from five to ten per cent. higher prices than non-members. The same applies, I think, to everything else handled by us.

"Every Thursday the directors meet and set prices for the following week. Sometimes the members have been offered prices higher than these, but in every case the proposition was turned down. In fact, outsiders have tried very hard to break the association, but I am glad to say they have only made it stronger."

Watching the Pendulum Swing

So said the president of the association. But there is another thing besides producing and selling vegetables that is causing these growers to paint their fence posts. It is not a thing that can be cornered in any one district either. It has existed ever since a certain young man and his father-in-law had a bickering before the plain of Jordan. I suspect it has been clothed in different gowns and has existed under divers names, but in plain English it is called real estate.

Unlike Mercy, when a boom comes, Real Estate rarely blesseth both him that gives and him that takes. It is usually wonderfully beneficial though, to him that takes and gives quickly enough. Sometimes a boom has a very solid foundation, and if the pendulum doesn't swing too far all is well. The pendulum is swinging in Leamington just now and the farmers are watching every advance.

Spy, King & Co.

In the Battle for First Prize in Apples, the Victory Goes to the Tree Fortified By Careful Thinning, Pruning and Spraying

By F. M. CLEMENT

Type of Rhode Island Greening that is a winner if the specimens are perfect.

The writer of this sketch, who is a well-known judge of fruit exhibits at our Provincial fairs, gives us here very pointedly the features to consider in producing an apple of quality. Many apples of excellent development and color are blemished by insects and fungous pests, enemies which the orchardist can control only by beginning early. Spraying used to be looked upon as an expense; now it is recognized by up-to-date farmers and growers as an investment, bringing in enormous profits. The tremendous increase in the various kinds of insects and fungous diseases and the prolific faculty of most of these, demand quick and thorough measures. —Editor.

WE WERE one plate in twenty. We all looked very much alike and one might have supposed at first glance that we were brothers, but we were not. Yet we had the same name, so I suppose that we all must have descended from the same grandparents. Some one called us Northern Spy and we felt quite proud because we had heard some one say before that in all the markets of Canada and Great Britain, Spy stood for the highest excellence in the apple. The plate to our right—five specimens, just the same number as in our group—remarked that their home was near Collingwood and that they had been selected with great care from among hundreds of brothers and cousins to represent their family and county at the great Exhibition, and that their friends at home had great hopes that they would win the red ribbon and so bring great honor to their county; that even now their relatives were waiting the results of the judging which were to be sent home by wire at once.

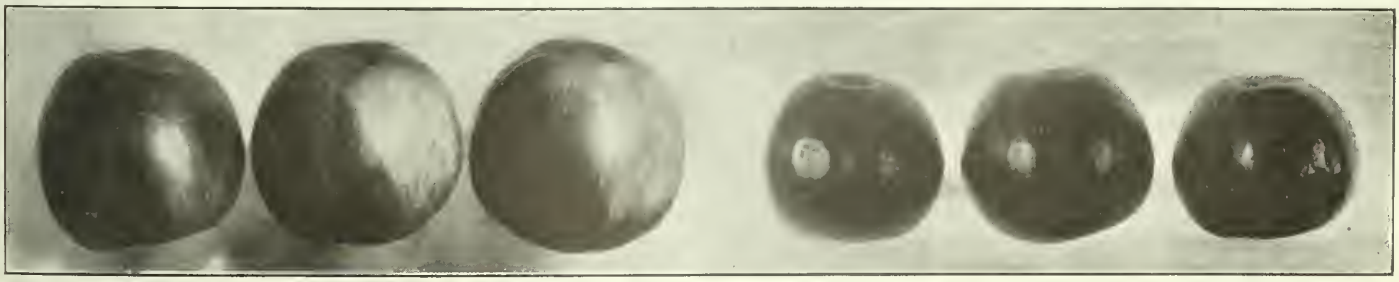
The friends on our left seemed very quiet at first and did not care to talk, but after we became better acquainted they whispered that their home was in Northumberland county ,and that they felt a little out of place because they were smaller than their Collingwood cousins; that they too had been sent there on the same mission, but did not quite see how they could accomplish much when their friends were so much larger. But they were proud of their bright red coats that had been polished for the occasion and they were depending on that to attract the attention of the judges.

We told our friends and cousins that our home was in Norfolk county, and that we, too, felt quite proud of our red coats, though they had not been polished. We felt proud of our size, too, and our great similarity of appearance. One might have thought that we had been born of the same parents, but we had not. We had all been carefully selected from different trees. We told them how our master had come to look at each of us several times while we were growing, and how he would smile to himself as he looked at us and how it made us feel happy. Each of us had heard him remark that we were beautiful specimens and that unless something serious happened to us we would be sent to the exhibition.

Our master had removed some leaves that shaded us and cut away some small limbs and twigs that were so near they might injure our tender skins when the wind blew. We were glad to be protected in this way and allowed to live in the sunlight. One day our master came into the orchard carrying a basket in his hand in which was some wood fibre. I think he called it excelsior. He also had a piece of tissue paper about the size of a handkerchief. We were frightened at first when he came very close and took from his pocket a pair of scissors. But our fears were groundless, for holding the paper close below each of us in turn he cut the little spurs on which we grew, and without so much as touching us with his hands, wrapped us in the paper and packed us in the basket, carefully surrounded and protected by the excelsior. Here it was very dark and in a short time we fell asleep and knew nothing more until we wakened among our cousins on the table. We understood then what our master meant when he had made the remark about the exhibition.

We were all growing somewhat tired of discussing our adventures with one another when two men came near, whom we had not seen before. They began to look at us intently and as we were wondering what was going to happen one of them suddenly picked up the plate on which we were resting and placed it at his right, near the head of the table. We were frightened at first, but we soon understood that no harm would come to us as we were picked up and set down very carefully, as carefully as we had been by our own master. We were quite alone now and having no one to talk to, waited quietly to see what would happen.

We had not waited long when our Collingwood friends were placed near us and a few moments later our Northumberland friends. We knew now what it all meant; we were being judged, and the two men who had looked at us so intently, but handled us so carefully were the judges. Very soon two other plates were placed near us, making five in all, selected from all that number from which were to be selected the winners. We felt even more distinguished when we were placed in a row at the head of the table by ourselves, and all



Medium and small dessert Spies, showing type and high color desired.

Uncommon type of King that won at Toronto last year because of high color—a very dark red.

the other plates were put some distance away.

But the real test was just beginning. One of the judges picked us up and gave our stems such a pull that we thought they might be broken away, but they were not. We were placed back gently on the plate again and then left while the judges went to the last plate in the row.

One of the judges here picked up what to us looked the most beautiful specimen of us all. It was of large size and red all over and had on its side a piece of white paper on which something was written. The contrast was excellent, and we began to wish that our master had placed a white paper on us to contrast our red color. We felt sorry, too, when we saw one of the judges remove the paper, but our sorrow changed to gladness when we saw that underneath that paper was a small worm hole —a blemish. In the meantime the other judge had found on the same plate a specimen that had on it a little mark that he called scab. The whole plate was placed at the foot of the table. Yes, we were glad, not because our friends had been put back in such lowly company, but because the master's deception had been found out and he had been punished.

The next plate was now put through a similar test. Each apple was examined separately. Every tiny mark was examined minutely; the color was commented upon, the size was pronounced fair and the form or type was said to be the best of all. We began to fear that we should lose our place when our friends were taken off their plate and placed in a row on the table. Here they were examined critically again, then placed with the lot at the far end of the table We were wondering what was the matter when we overheard some one say that there was some variation in size and color, or in other words they had been thrown out because they lacked in "uniformity."

The next plate to be examined were our friends with the bright, red, shiny coats. They were very much alike in color and size, and their forms were identical. Like the rest of us they were examined individually, but not a spot or blemish could be found. Apparently they were perfect. But compared to us and the friends next to us they were small and we learned later that was why they were left in third place. We were being judged as an export class, and the dessert size could not be given the preference.

Just two plates of us left. How we were compared point by point! There was not a blemish or disfiguring mark to be found on one of us. In size our neighbors were all alike and we were all alike. In shape they were all alike, and we were all alike. We were conceded to be equal in uniformity, form, size, and freedom from blemish. But there was one other point to be considered, that of color. We were all turned round in our places several times, and observed in different positions. We were taken from our plates and arranged in two rows side by side. We were arranged again tastefully on our plates and were beginning to wonder what was going to be done next when the judges stepped back and called to the clerk a short distance away.

It took us some minutes to realize it all, but now we understood why our master had cut away the leaves to give us every advantage of sunlight, why he had been so careful not to remove any of Nature's bloom, and why he had handled us so carefully. Our friends had lost because they were a little lacking in color.

Home Mixed Fertilizers

C. F. Fawcett, a big potato grower of New Brunswick has had considerable experience himself, and also as buyer in his co-operative society, in the matter of home mixing of fertilizers to produce the big potato crops of that province.

To save money and to assure themselves that they are not paying for useless filling material, they make their own mixture. Mr. Fawcett takes 1,000 pounds of acid phosphate analyzing 16 per cent. available, and places it on the barn floor. To this he adds 400 pounds of muriate of potash and places that evenly over the acid. He next takes 440 pounds of nitrate of soda and after breaking it up fine by means of a shovel or block of wood he spreads it over the other mixture. The pile is now shovelled over twice, doing it as carefully as possible, the best plan being to let the pile grow conical in shape. Then by putting a shovelful on top every time the material is mixed much more evenly. The material is now ready for use and may be placed in boxes or barrels.

A ton of material made up in this way is a very high-grade article and it can be easily seen that there is not much waste in it.

Any farmer can mix this material and it will give him no trouble in the potato planter. The cost will run about $16 for a ton and it can readily be seen that it will be much cheaper for the average farmer to mix his own chemicals.

Ordinary type of King which when fully ripe shows a yellow cast with splashes and streaks of red. This is the type which usually wins.

It took us some minutes to realize why he had been so careful not to remove any of Nature's bloom.

Making Money With Orpingtons

A Woman's Experience with the Dutiful Little Ontario Hen

By MARION S. HILL

Farm industries for women are becoming popular throughout Canada. The girl who can earn money without leaving the home and the farming community that need her so much is a real asset to the country. In this article Miss Hill has shown what a girl can do with poultry, by giving her own experience from a small beginning in a city backyard to operating an extensive poultry plant on a farm. The article is full of information for poultry-raisers and inspiration for the girl who wants to make money at home.—Editor.

IN THIS age of progress we hear much of what women are doing in almost every profession and line of business, and amongst these pursuits some of the lighter branches of agriculture, such as poultry keeping, bee keeping and fruit growing are becoming very popular, as they offer an abundance of variety the year round, and are being successfully carried on. With a love of the out-of-doors and animals no woman can find a more healthful, profitable or pleasant occupation than poultry keeping, and it ought to do much to induce our girls to stay on the farm, instead of flocking to the cities and towns in such large numbers, which is so deplorable at the present time.

At the outset I would like to say that I was born and brought up in a town, but as I proceed with the story of my work with poultry you will see that I did not stay there. My first experience with chickens was in our own back yard in Guelph, when I took it up as a hobby seven years ago last autumn. At that time eggs were beginning to rise in price, and as we had a nice comfortable stable that was not occupied, I thought it would be a good idea to get some chickens to provide us with plenty of fresh eggs, so forthwith bought half a dozen pullets. Being very ignorant on the subject of feeding and management at that time, I was under the impression that each hen would lay an egg every day, so you can imagine my disappointment when we did not get a single egg from those pullets all winter, Easter Sunday bringing the first. This, I afterwards discovered, was partly due to the birds themselves, but more particularly to my poor handling, and I regret to have to confess it, those poor chickens on several occasions went to bed with empty crops. Being so fortunate as to have the Poultry Department of the College so close at hand, I took advantage of Professor Graham's knowledge, and sought advice from him, and by degrees got better results. The next winter things were beginning to look a little brighter, when I had half a dozen nice pullets of my own hatching and rearing, which began laying early in December and continued to do so all winter. During that winter I took a short course in poultry keeping at the Ontario Agricultural College, so keen was I becoming on the subject. Just here I might say that I never spent a more profitable or pleasant four weeks in my life, as the amount of practical experience and information I picked up was amazing, and I cannot give better advice to farmers' wives and daughters than to take this course which is given free every January. From this I got my first inspiration to make anything out of poultry, and as I had solved many of the difficulties by this time, I was encouraged to keep moving on.

During the next three years I tried several different breeds, keeping as a general rule about twenty-five hens each winter, from which we always got far more eggs than we could use, consequently had quite a number to sell at a good price. By this time I was convinced there was money in poultry when properly handled, and I was most anxious to expand and enlarge my experience, but this was impossible on a small town lot, so how was I going to do it? I have never been in favor of the three or five-acre poultry farms where intensive methods have to be resorted to, but believe that the farm is the proper and only place for poultry, where it can be carried on in conjunction with other branches of farming. Under these conditions there is plenty of land, which is the first essential to success, and means rearing chickens in the cheapest possible way, since the cost of feeding is reduced to a minimum. Not having the advantage of being a farmer's daughter, nor being in a position to own a place of my own, I had to content myself in town a little longer, or until I could get on some one else's farm. In the spring of 1912 the opportunity came at last, when I arranged to take charge of the poultry on a farm about thirty miles from Toronto, up in North York. This, my first experience of country life, was a delightful one, and I spent six months and a half in the heart of the country with never the slightest desire to go to town. Of course it was all very new to me, and my work with the poultry was on a much larger scale than had hitherto been my lot, but I set to work with a determination to make things go to the best of my ability. As might be expected I ran into difficulties and disappointments and made many mistakes, but in spite of all was able to carry out my plans pretty successfully, so hope I will be able to help others who are engaged in the same work.

An orchard makes an ideal spot for portable houses and poultry runs.

I began my new duties on the first of April, with a flock of forty hens and pullets of one of the utility breeds and a small flock of Pekin ducks, also an equipment consisting of a cement henhouse, 14 ft, by 30 ft., one 6 ft. by 8 ft. portable colony house, an out-door brooder, three small A-shaped chicken coops, and a one-hundred-egg incubator. My first thought was to rear as many chickens and ducks as I could from the materials which were at hand, and in the second place to market them to advantage. Now the conditions to carry out these plans seemed to me almost ideal after being cooped up in town. There was an unlimited amount of land which included an apple orchard, and a ten-acre corn-field where the rearing was done; besides this the hens and breeding ducks had the run of part of the pasture land, which was well watered by a spring creek so valuable for their wel-

Some of the 1913 pullets in the runways.

fare. In addition to this the shipping facilities to Toronto could not have been better, the C. N. O. Ry. station being on the farm just a five minutes' walk from the house.

My first work was to sort over the flock, from which I culled a few of the poorest-looking hens, and then proceeded to set some eggs in the incubator and under as many hens as I could get (as I firmly believe hen-hatched chicks make the best birds). Between the first of April and the third week in May I set over 600 eggs, from which I hatched 335 chicks, and managed to rear 250 to a marketable size. I cannot remember how many duck eggs I set, but I hatched 80 ducklings, of which 75 went to market. These young ducks were never allowed to swim, but as soon as they were old enough to leave the hen, were put in a run in a corner of the orchard and fattened, where they remained until they were ready for market at ten weeks of age. Just here I would like to put in a good word for the duck, as there is no more profitable side line on the farm than growing from twenty-five to a hundred ducks and disposing of them (before they have time to eat up the profits), viz., at ten weeks of age. The chickens were all reared on free range, and hopper fed from the time they were about five weeks old; I had to resort to artificial means of brooding to a certain extent, as my number of hens for the purpose was limited, for this purpose I used the out-door brooder, and the colony house. In the latter a hundred chicks were put, and before the last hatch came off, another colony house was built to accommodate them all. As time went on they began to outgrow their quarters, and at the age of nine or ten weeks when they weighed about two, and two and a half pounds each they were sold as broilers, bringing 25c per lb. live weight, and 30c dressed. Between the middle of July and the middle of September seventy of the surplus cockerels were sold as broilers and roosters, after that date the remaining ones (after the next season's breeders had been selected), were crate fattened and sold as roasters. Below will be found a table which will give you an idea of the gains in weight they made, and although it does not seem very much, it should be borne in mind that the quality of the flesh was improved to such an extent that it was worth the trouble considering the price received:—

Period of feeding.	No. of birds.	Weight at beginning.
2 weeks	30	124½ lbs.
Gain in weight.	Dressed weight.	Selling price at 20 per lb.
27 lbs.	133 lbs.	$26.60

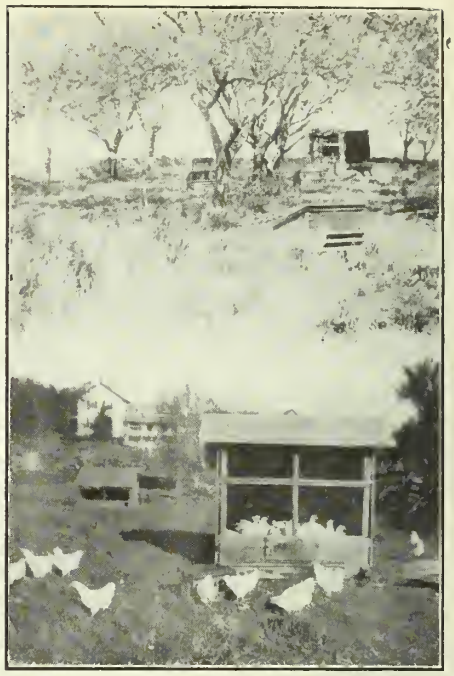
As the money making feature of this, as well as any other line of business is always of interest, I will give the following figures as they give the result of my work for the summer of 1912, from the 1st of April to October 31st:—

April 1st, 1912.

Stock on hand—		
40 hens and pullets, 3 cockerels..	$ 45.00	
Expenditure—		
Feed, kerosene, express charges, death losses, miscellaneous		$100.00
Cash receipts—		
100 dressed chickens	$ 70.15	
13 cockerels (live)	13.50	
66 pullets (live)	59.00	
265 dozen eggs	71.90	
23 hens (live)	14.00	
3 old male birds	2.25	
		230.80
On hand to carry over—		
45 pullets @ $1.50 each	$ 67.50	
25 pullets @ $1 each	25.00	
4 cockerels @ $1.75 each	7.00	
17 hens @ 75c each	12.75	
1 cock	1.00	
93 birds	$113.25	
Stock on hand April 1st, 1912..	45.00	
		68.25
		$299.05
		100.00
		$199.05

The seventy pullets, mentioned above, which I selected for our last winter layers, began laying the third week in October, and for the month of December the egg record was eighty-six dozen, and they kept on laying well all winter. The earliest of these pullets were hatched the last week in April, 1912. I did not have charge of these birds during the winter, but resumed operations again last spring, beginning a week earlier than the previous year, which meant a great help later on, as some of the earliest hatched pullets began laying last autumn about the last week in September. It was my ambition last season to double the flocks, so with more than twice as many hens to produce eggs, the next thing was to enlarge the equipment in order to handle the additional number of eggs for hatching, and the extra number of chicks. To meet the demands another incubator, two more brooders, and two more colony houses were added, and I think a fair valuation to put on such a poultry equipment would be as follows:—

The breeding ducks spend a good deal of the summer in the creek.



Types of colony houses used for rearing chickens.

1 Hen house. 14 ft. x 30 ft.....	$ 65.00
4 Colony houses, 3, size 6 ft. x 8 ft., and 1 size, 8 ft. x 10 ft.....	100.00
2 Incubators	50.00
4 Brooders	25.00
7 Chicken coops, 3 feed hoppers and water tins	10.00
	$250.00

The actual cost of the four colony houses, the seven chicken coops, and the three feed hoppers would not amount to more than $10.00, as they were all made out of old boards found on the farm, and all that was bought were the nails, prepared roofing, and wire netting, in which case you see the actual cost of this equipment is reduced about $100.00.

Some of the land used for rearing the chicks last year was the same as in 1912, but the most of it was new, that is to say, chickens had never been reared on it before. As I said before, my object was to double the flocks, so I set 1,200 eggs from which I hatched 565 chicks, and over 400 reached a marketable size. The mortality was low, but I was not so fortunate in other ways last year, as quite a large number, particularly the late-hatched chicks, were carried off by crows, and rats played havoc with the little ducks, to say nothing of losing quite a few from some unknown cause; however, even after these discouragements, the number left was quite large enough for me to handle and prepare for market.

I followed the same methods of marketing last year as I did the previous summer, viz., disposing, as soon as possible, of the early surplus cockerels as

(Continued on page 82.)

At Home With The Doddies

The Artist Eye of J. J. Cridlan Producing the Health Making Animals in the Rich Valleys of England

By W. H. TOMLINS

MR. CRIDLAN was born in Worcestershire and from his early boyhood—which was spent among the white-faced Herefords—he aspired to the possession of a good herd of cattle. At the outset of his stockraising career his sympathies were not unnaturally with the breed with which he had been so closely associated in his childhood. A fuller knowledge, however, acquired through visits to the North of England and Scotland, turned his loves, as far as the butcher's beast was concerned, to the Aberdeen-Angus, and from that time all his efforts were directed to the gaining of the knowledge of pedigree and of the principal strains of the cattle of his choice until the time when he would be able to found a herd of his own.

About seventeen years ago, Mr. Cridlan heard that the Maisemore Park Estate was in the market, and almost immediately he purchased it, because he could see that a long-awaited opportunity to own a good herd of cattle had at last presented itself. He foresaw that the Park could admirably be adapted to the successful rearing and development of the Aberdeen-Angus strain, and his expectations have been as he wished.

Maisemore Park has an area of 200 acres and is charmingly situated on a wooded plateau of about 100 feet above the river. From it magnificent views of the Cotswolds and Malverns can be obtained, as well as a great reach of characteristic English scenery, while the spires of the fine city, and the delicate tracery of the noble tower of its Cathedral, can be seen through rifts in the trees.

A Land of Rich Pastures

Several of Mr. Cridlan's fields are on the bank of the river Severn. All but ten acres consist of grass, most of which is of extraordinary quality, its thickness and length, even late in the season, far surpassing that to which most agriculturists are accustomed.

The land is rich, well-watered, and nicely sheltered.

Since Mr. Cridlan came to Maisemore Park, he has greatly improved the farm buildings. The housing accommodation has been modernized to suit the requirements of a first-class herd, and there is evidence of considerable expenditure in making the stalls and boxes comfortable and well ventilated. The houses are all kept scrupulously clean, and, with a mixture of carbolic, are lime-washed by machinery twice a year.

It is remarkable the reputation that high-class animal-breeding can bring to a property. This can, with truth, be said of Maisemore, for, until the estate came into the possession of Mr. Cridlan, in 1897, it was very little heard of beyond the confines of the City of Gloucester, from which it is about three miles distant. At this place Mr. Cridlan established the herd of Aberdeen-Angus cattle, which he has made so famous, with the result that Maisemore Park has become well known all over the three kingdoms, and is now favorably recognized, not only in Canada and the United States, but in Australia, Argentina, Tasmania, and the Transvaal, where specimens of the herd have been established.

Everwise, winner of fifteen first prizes, six gold and nine silver champion medals.

There can be no lack of interest on the farm where animals furnish the leading revenues. When the breed interest claims the farmer, the real joy of farming seizes and fires the imagination as can no other sphere of agricultural work. The law of reproduction as noted by the student in the Mendelian theories are as yet little understood. Yet the production of types furnishes a rich reward to the farmer, not only in dollars and cents but in the inward satisfaction of his work. This article by an English writer, tells of a visit to the home of a celebrated breeder and judge of "Blackskins," which have many friends already in Western Canada.—Editor.

Out-of-Doors Healthfulness

The entire stocking, roaming on the pastures, look very robust and healthy. Mr. Cridlan always was a believer in open-air life, and non-showing female animals are never housed until they are near calving. According to most people the chief argument in favor of covered yards is the much greater value of the manure made in them, rather than the comfort and health of the animals. But where the manure is not protected from the air and rain in separate sheds, there lurks a great danger, as it becomes a very hotbed of disease germs, and a nursery ground for tuberculosis, which, Mr. Cridlan believes, is caused through artificial life.

Of course, the mild climate of Gloucestershire, where there is little frost and snow, gives Mr. Cridlan an advantage over his Scottish colleagues and other breeders, who have to keep their cattle in byres for six months in the year.

The breeding animals are fed on the pastures all the year round, except the cows during the calving season. The latter return to the pastures in April. When in the sheds they are fed on roots, with a little meal and hay. Female

The farm home on Maisemore Park where Mr. Cridlan established his famous Aberdeen Angus herd.

animals, being prepared for breeding shows, have a little meal and roots on the pastures. The bulls are stall-fed with roots, cabbage and a small quantity of meal. Fat stock are allowed out in pasture paddocks during the day, and at night during autumn and winter are housed in boxes.

Electricity Pumps the Water

The water the animals drink is pumped by electric power from springs flowing from limestone.

All animals are groomed regularly and regularly washed. Mr. Cridlan rightly thinks that cleanliness and freedom from itchiness are conducive to contentment and progress.

The method of transit of the animals to the various shows throughout Great Britain is by special vans per passenger trains. In other words, they travel first-class at a cost of 6 cents per mile for the first animal, and 4 cents per mile for additional ones up to four in a van. There is also very comfortable accommodation for the herdsman attending—one attendant being allowed to every three animals.

Mr. Cridlan's farm is splendidly adapted for the growing of roots and other crops for the supply of the stock. Ireland is generally regarded as the ideal country for the successful growth of the mangel crop, but many Irishmen who have visited Maisemore Park declare that they have never seen anything so luxuriant as "the break" on the rich lands near Gloucester.

In this district, orchards are a specialty, and a well-exposed and prolific one was planted twelve years ago, the principal trees being Cox's Orange Pippin, Blenheim Orange, Prince of Pippins, Newton Wonder, and Wellington; Czar plums, and prune damsons.

A productive garden is well-stocked with all the necessary vegetables for supplying the house.

He laid the foundation of his present herd of cattle by the purchase of thorougly typical animals from the best herds in Scotland, and the North of England, a process which was considerably facilitated by the knowledge he possessed of these herds and their history. He went to the very best sources, and judges will acknowledge that he has been a most discriminating and resolute bidder at the leading sales in recent years.

In actual numbers, the herd is perhaps the largest in England, the usual strength being about 120 head, while in its constitution it can be surpassed by none, containing, as it does, the most popular strains of Angus blood.

Wins at the Royal

How soon after its establishement the herd began to come to the front, may be gathered from the fact that in 1899—the second year after Mr. Cridlan's arrival—he won three first prizes at the Birmingham show, and a couple at the Smithfield. In the following year, the Royal Show was entered, and a first prize obtained, this constituting the first of a series of wins at the national exhibition, including several gold medals. Besides these honors, obtained at the Royal, the Maisemore herd has won prizes at the Bath and West, Royal Counties, Yorkshire, Highland, Northumberland, Gloucester, Essex, Peterborough, Oxfordshire, Staffordshire, Norwich, Birmingham, Leeds, and Smithfield. In fact, at every exhibition in England. In addition, the herd holds the unique distinction of winning three of the highest awards in the space of three years—the champion Aberdeen-Angus bull at the Royal Agricultural Society's Show in 1902, and the best ox or steer at the Smithfield Club's show in 1901 and 1903.

Maisemore is a veritable home of Trojan Erica blood, for there are no fewer than 23 females of this much-valued family in the herd. The foundation stock was judiciously selected, and it is little wonder that individual animals bred in the herd have had such successful show-yard careers, and, from time to time, bring fresh lustre to this home of the "Doddies." Members of different families in the herd are at present in great demand, not only at home, but for exportation to different parts of the world.

John Joseph Cridlan a leader in local agriculture, and an experienced breeder and farmer

A Leader in Local Agriculture

A word or two as to the positions Mr. Cridlan has held. In 1897, he was elected to the Council of the Smithfield Club, and was a steward during the years 1905, 1906, and 1907. He was elected president of the Gloucestershire Agricultural Society in 1902. In 1908, and 1909, he served as president of the English Aberdeen-Angus Association, and, in the two years which followed, was president of the Aberdeen-Angus Cattle Society. Of course, Mr. Cridlan is at present a member of a large number of agricultural societies.

As a judge, Mr. Cridlan's experience is almost commensurate with his experience as an exhibitor. He has judged the shorthorns, and cross-breed classes at the Smithfield Show, and all the breeds at Edinburgh, Dublin, and numerous minor exhibitions of fat stock. He has been called four times to pass on the animals at the Perth Aberdeen-Angus Show and Sale, and twice at the Royal Dublin, the Highland, the Royal Ulster, and many others. In 1910, he accepted an invitation to officiate at the Buenos Ayres great Centenary Show of the Aberdeen-Angus breed classes and shorthorns, Herefords, and Angus in the fat stock classes.

Undoubtedly one of his greatest achievements was in 1911, when he was hailed by the United States press as a capable judge at the great International Show at Chicago.

Mr. Cridlan has had large experience as a butcher in the West End of London, and, when judging, approaches the task from the viewpoint of breeder and butcher; his judgments, therefore, represent the last word in such matters.

In addition to keeping up his Aberdeen-Angus herd, Mr. Cridlan also breeds Shire horses successfully.

He has patronized the fat stocks shows for several years with varying fortunes. There are at Maisemore some fine stock with a grand foundation for practising the breeder's art for future showing. Amongst the older stock for this purpose, a Hereford ox shows beautiful cover with his tail well arched, with plenty of filling over and behind his shoulders.

In conclusion, it may be mentioned that, although the Aberdeen-Angus breed is the specialty of Mr. Cridlans. Devons, Herefords, and cross-breeds are sometimes fed for shows, at which many prizes have been won, and some quite recently.

Natural Root-Grafting

An article by A. Howard in the Agricultural Journal of India describes the attempts made at the Pusa Experimental Station to protect field crops from injury by the roots of neighboring trees, by digging a deep trench each year between the trees and the adjacent cultivated area. In the case of some trees this plan proved successful, but not in the case of others, such as the pipal, banyan, and teak. When the trenches were opened up it was found that the severed roots had become connected again. New roots had been formed at the cut extremity, they had grown across the trench, which was 24 to 30 inches wide, and united with the severed portion of the root by a process of natural grafting, followed by a rapid thickening of the connections, which attained a thickness of 0.8 to 1.1 inches in twelve months.

A B.C. Acre Yields $1,600

John Walsh Competes With John Chinaman and Points the Way to Big Profits

By JOHN T. BARTLETT

We have often heard that it is impossible for the Canadian to compete with the Oriental gardener in British Columbia. In this article, however, we have the story of a man who is making a little fortune every year from potatoes and celery and green stuff with Chinamen growing the same product all around him. He markets his goods through the commission men too, and finds that it pays. The story is unique and may come as a revelation to many of our readers.—Editor.

A tall, straight man, with thin cheeks fringed with a grey beard, black eyes which twinkle or glint fire with the mood, facile speech, with the vocabulary of a dictionary-maker — that is John Walsh, of Steveston, the most successful market gardener in British Columbia.

I am convinced, after intercouse with several men who have made conspicuous success of various phases of farming, that love of the work was the basic reason for their prosperity. The point impressing you the most about Walsh is his idolatry of plants. He finds pleasure by the hour in the menial, but no less expert task of setting out celery plants, in bringing a head lettuce crop safely through a dry spell, or in fighting an insect which is devastating his garden. His market gardening enterprises at Steveston almost smack of asceticism. He is unmarried. He lives by himself in a little shack. His work and his play are found among his plants. Most of his reading is in agricultural publications.

Walsh has had a chequered career. He was born to the soil in an Old Country town, and when a young man emigrated to the States, striking out for what were then the outposts of civilization west of the Mississippi. He has gardened, sometimes for himself, sometimes for others, continuously since. He sojourned for thirteen years in Denver, Colorado, when the market gardening industry at that point was in its infancy. A few years later he was caring for a millionaire's estate in Oregon. When he dropped, four years ago, into Steveston, sleepy little cannery town on Lulu Island, his only capital was his brains, but he managed to rent some land.

His achievements at Steveston have been noteworthy.

He has triumphed over Oriental competition.

He has sold his produce through that much maligned individual, the commission merchant, and secured satisfaction.

He has made $200 an acre on cabbages; $1,600 an acre on head lettuce; $800 an acre on radishes; and similarly large profits on other crops.

"These Orientals——" I queried of Walsh on my first visit to his gardens, for Lulu Island is a stronghold of the Chinese farmers. "How do you beat them?"

"On most vegetables I never try to beat them," he admitted readily. "On beets or carrots, for instance, or turnips. It takes no skill to grow such vegetables; they bring small returns; and the Chinaman makes more money from them than I could, for his labor is cheap and he peddles from house to house, cutting out the railway company, commission man and grocer. But the Chinese simply can't grow 'quality' produce, and that is the white man's chance. Let the white man become more skilled than the Chinaman and he will be successful. Celery, spring cabbage and head lettuce—there are three vegetables the white gardener, if he is skilled, can grow and be sure of a profit."

This hints at the reasons for Walsh's success. He grows produce with which the Oriental can't successfully compete. He has so well analyzed his market that in this, his fourth year at Steveston, he grew in large amounts less than half a dozen vegetables, and most of his time and effort he concentrated on two of these, head lettuce and celery. It boots it little to grow produce which can't be sold at a profit. The selling side of the gardener's business is fully as important as the producing side. Walsh determines the profitable vegetables, grows them well, and then sends them to market carefully graded and well crated. The crates are stenciled with the name of the grower.

Celery, spring cabbage and heal lettuce are three vegetables which the white gardener, if he is skilled, can grow and be sure of profit.

Everything he desired to sell, Walsh sold this year, and on everything he made good profit.

The Steveston townsite was put on the market in '92 under a mistaken belief that the C.P.R. had decided to locate its coast terminals there. The boom proving abortive, the town degenerated into a fishing settlement, and a majority of the 33-foot lots purchased thirty years ago by speculators are still vacant of buildings. Upon several blocks of these properties, which have the advantage of being near transportation, the subject of this article gardens. Five different parcels went to make up the seven acres he cultivated this season. The land is alluvial, peaty and streaked with clay. It yields readily to cultivation, and in productivity is equal to other delta lands along the Pacific Coast. Walsh rents it at from $15 to $25 an acre.

While old in years—he is past fifty—Walsh combines in his work the skill of long experience with the enthusiasm and eternal freshness of youth. He is constantly experimenting. On one of his plats he showed me cabbage he was growing to determine the value of fertilizer. Side by side with three feet between rows and with four-foot spaces for checks, he had planted thirty rows, each row containing an equal amount of Danish Round Head and Danish Ball Head, grown from seed imported from Holland. Ten rows were on soil fed with a complete commercial fertilizer, ten rows had no fertilization at all, while a third series was fed with fertilizer lacking potash.

Over-fertilization has to be guarded against in cabbage culture at Steveston. The land is very rich in nitrogen, and if care is not taken in applying fertilizer large heads will be produced which are not so saleable as the three-pound head, the ideal size.

Walsh does not specialize in cabbage, but has made good profits from the vegetable, and to spring cabbage expects to give much attention in the future. Last year, he told me, he sold his cabbage for $18 a ton, producing twenty tons to the acre. Ten per cent. on each ton, or $1.80 went to the commission man. The freight per ton from Steveston to Vancouver was $2, and the cartage charge 75 cents. Crates cost 27 cents each. There were nine to the ton, which made an item of $2.43. On the growing side the following items on an acre were to be offset: Rent, $25; plowing, cultivation, teaming, labor, $65; seed, $1; total, $91. It will be seen that

though the acre profit was not immense, it was a good one.

The chief obstacle to successful cabbage culture, as it is to a greater extent of cauliflower growing, is the root maggot. This distructive pest disappears elsewhere about the first of July, but in the Fraser Valley stays on throughout the summer.

The experimental cabbage patch I have mentioned. Walsh has since sown spring cabbage. Spring cabbage sells in the late spring in British Columbia for $50 a ton, and though the acreage yield is considerably less than the ordinary varieties, the net profit is much larger in an expert's hands. The difficulty in bringing a head lettuce crop sucessfully through the winter in the vicinity of Steveston is principally a matter of drainage. The plants will not survive in land inundated by or even containing an abnormal amount of water. And the character of Lulu Island soil, owing to the large content of organic matter, is such that it holds three times the amount of moisture that a sandy soil does.

To a rational extent Walsh practises intercropping. Late celery for example was a companion crop on one two-acre plat to head lettuce. When the latter was removed there was plenty of room for the celery to mature. Another garden, containing about an acre, illustrates well the potential profits in market gardening. A portion of this grew in the spring a profitable crop of radishes. Head lettuce followed. Then the season was rounded out with a splendid crop of celery.

The costs in connection with the radishes, which were of the white tip scarlet turnip variety, Walsh has figured out accurately. On an acre basis, his profits on the crop were over $800. Rent of land he charges to the main crops, lettuce and celery. He used 22 pounds of seed, costing approximately $29, to the acre, planting in drills six inches apart. Cultivation, which was done with a wheel hoe, cost $50 an acre. The remaining expenses were in marketing. Paying his men $2.50 a day, he found that it cost eight cents to pull, wash, bunch, and crate a dozen bunches of radishes. Thirty cents a dozen bunches was received this season, and the yield was about 4,000 dozen bunches to the acre. The gross returns, therefore, amounted to about $1,200 an acre, leaving a profit of approximately $800.

The Cninaman hucksters his produce from house to house in the towns and cities.

The typical man with the hoe in British Columbia.

In head lettuce, Walsh discovered a gold mine. He marketed head lettuce regularly from early in the spring till late in November, during much of which period there was absolutely no competition from the States or from Chinese gardeners. Drought during late July, August and September, and frost through October and into November, natural stiflers of local Chinese competition, were overcome by Walsh in an ingenious manner. He devised a system of irrigation, and he used muslin.

The district around Steveston is intersected by drainage ditches which fill daily with the tides. Ditches of this nature pass Walsh's gardens. He purchased, at an outlay of $250, a 3½ h.p. gasoline engine, able to pump water at the rate of 200 gallons a minute. Then he purchased canvas hose, and, at a trifling expense from a salmon cannery, some old pipe. With this outfit a man fed at regular intervals the head lettuce, covering about an acre a day.

Under certain circumstances an irrigation outfit of this sort would have been prohibitive in cost, but it was not in this instance.

The head lettuce plants were set a foot apart, nine to the square yard, and an acre accommodated approximately 40,000 plants. Forty thousand at five cents, the average price secured by Walsh, is $2,000. Twice $2,000—for two crops are grown on an acre yearly—is $4,000.

This was the maximum gross income possible from an acre, but naturally it was not attained. Decreasing the maximum by one-third and subtracting therefrom the growing, packing and selling costs, he makes $1,600 his profit per acre where two crops were raised.

Co-operation is a much abused word. Without disputing for a moment the economic benefits resulting from it, there is no question but that many bad farmers use it as a crutch for their weaknesses. It is true, too—the truth might as well be faced—that that much-attacked institution, the middleman, has some justification. If we should search history, we might discover that, like the brown-tail moth, the middleman did not enter America on his own wings. And the middleman has about as much to do with the majority of farm failures as weather at the North Pole with the corn crop in Egypt.

Walsh says a good word for the middleman in a day when it is the fashion to condemn him.

"I have sold from house to house, direct to the grocer, and through the middleman," he said to the writer, "and I have found the most profitable method to divide my output between the grocers and the middlemen, giving the latter the bulk of my vegetables and shipping to the former the choicest grade for which a tempting price will be paid. There is an economy realized through selling through the commission man. He has a distributing organization which the individual farmer cannot duplicate. On the first grade vegetables I can afford to hire a transfer company to deliver my produce to the grocers, but with the lower grades I cannot."

As with every line of business, there are crooks who sell produce on commission. It is up to the grower to protect himself against these. Walsh has a standing arrangement with his commission firm to telephone him at his own expense if he overships.

What with Oriental competition, high labor expenses, and damaging transportation rates, market gardening in British Columbia is not child's play. Walsh's profits during his five years at Steveston have not put him in the millionaire class, but he has discovered enough to make profitable market gardening during the rest of his life a sinecure. He is optimistic about the future of his chosen industry, and predicts that once Chinese competition has been eliminated, the Fraser Valley will rapidly become one of the truck-farming centres of Canada.

The Hindu at work.

A typical farmstead in the Elgin dairy district of Ontario.

The Cheese Factory Era

When the Farmer Tried to Please Everybody He Didn't Even Please Himself and Lost His Cheese in the Bargain

By PROF. H. H. DEAN

"The Farm Dairy Era," which appeared in the February issue of Farmer's Magazine, was picturesque and entertaining enough to make the second article of this series more than welcome to our readers. In this, Prof. Dean goes thoroughly into the history of the growth and causes of the decline of the cheese trade in Canada, a matter of vital importance to every farmer and dairyman. Especially worthy of consideration is the importance which the writer attaches to system and cleanliness in every detail of dairy work. The third article of the series will appear in our April number.—Editor.

THE introduction of the co-operative cheese factory proved to be a great boon to our dairy farmers. The returns from farm butter-making had been so small compared with the labor involved, that many farmers, and particularly their wives hailed the advent of the cheese factory as a veritable Godsend. Compared with the making of butter and trading it at a grocery store it undoubtedly was so, but several serious mistakes were made in the establishment of the cheese factory system in Canada, mistakes which at present are causing serious decline in our cheese trade, and may eventually drive it out of existence.

These mistakes were, in the judgment of the writer: (1) The acceptance of practically all kinds of milk for the manufacture of cheese, which resulted in an inferior product that had to be sold at a low price and cheese has never recovered the ground it lost on the start, and it is doubtful if it ever will get over this stigma which was attached to the early Canadian cheese. A man who has a good product can command a good price, but an inferior article has to be sold at any price which the purchaser cares to offer. The milk condenser companies have profited by the mistakes of the cheese men, and they will not accept inferior raw material, consequently they are able to turn out a manufactured article which is good in quality; they know it, and they know they can get the price which a good article in demand always brings.

In these early days of the cheese business farmers did not know how to care for milk, neither did the cheesemakers nor the cheese factory owners, consequently all kinds of advice was given to the farmers, some of which was valuable but most of which was mere rubbish. The consequence was, the farmer tried to please everybody; he pleased nobody, not even himself, and lost his cheese into the bargain. When the scientist tackled the problem, he reduced the care of milk to two simple rules—keep everything clean; keep the milk cool.

(2) The second mistake was in assuming that any sort of building and equipment was good enough for the manufacture of cheese. Many of these ramshackle establishments were a disgrace to the dairy industry, and we have not altogether got away from that idea yet. The character of the goods made in any manufacturing establishment is determined to a large extent by the character of the raw material and the equipment for making the goods. We need to remember that creameries and cheeseries are manufactories for the production of goods for human consumption.

(3) The third mistake was in assuming that almost anybody could make cheese. There were no dairy schools in those days, hence the men who took charge of the new factories springing up all over the country were men who had probably worked in a factory for a season as helper, or who may have been milk haulers and had seen cheese made while at the factory with loads of milk. These men knew little or nothing about the composition of milk, and nothing at all about the science of cheesemaking, hence a great deal of the stuff turned out of these factories was poor in quality and had to be sold for a low price.

(4) Combined with all this was a poor system of marketing. The cheese markets were controlled by speculators. In consequence, farmers or producers received a comparatively low price for the milk sent to cheese factories, and the consumers paid a comparatively high price for the cheese after it had passed through the hands of local buyer, cheese exporter, cheese importer, large cheese dealer in England, small cheese dealer in England, retailer in England—each of whom put on a small tax as it passed through his hands from producer to consumer, not to mention added costs of transportation by railway and steamship companies.

Origin of the Factory System of Cheesemaking

The story of the origin of co-operative or cheese factory dairying is somewhat as follows: Near the town of Rome, Oneida County, State of New York, lived a man named Jesse Williams, who had several sons. The elder Williams was a skilful cheesemaker, whose cheese sold for an exceptionally high price. By and by one of the sons married and kept cows on an adjoining farm, but his

View of the old dairy building and herd at the O.A.C. These buildings have since been Despersed with.

cheeses were not so good as those produced on the home farm, nor did they bring so high a price. Finally this son said one day, "Dad, suppose I bring my milk over to your place and you make it into cheese along with that produced on the home farm?" "Alright," heartily responded the father, and so the milk from the two farms was mixed and made into cheese of the finest quality. This took place in 1851. The neighbors, hearing of the success of Williams and Son, said to them, "Why not allow us to send our milk to your place and you make it into cheese along with your milk?" "Well, in that case we should have to build a bigger factory, as our present dairy will only accommodate the present supply of milk," said these pioneers in the cheese business. "You put up the factory, and we'll furnish the milk," replied these insistent neighbors. So in 1852 on the Williams farm, Oneida County, New York State, was built the first American cheese factory.

From there it spread to other counties, among them Herkimer, where lived a family by the name of Farrington. Harvey Farrington heard of Canada and came to Oxford County, Ontario, settling near the town of Norwich. This was in 1863. He let the contract for building a cheese factory that autumn, and during the winter it was built on lot 10, concession 4, of the Township of Norwich. It began operations in the spring of 1864. Ever since then Oxford County and the town of Ingersoll have been regarded as the home of the cheese business in Canada. "Ingersolls" are quoted on the markets of Great Britain, though it is scarcely likely that all the cheese so rated are made in the vicinity of Ingersoll, for the reason that the milk condenser and the town and city milk and cream trade are compelling the closing of many cheese factories in the once famous cheese district.

From Oxford the system soon spread over the major portion of the older settled districts of Western Ontario, and also to Eastern Ontario, where there are at present a greater number of factories than in Western Ontario, but they are usually smaller in size. Among the names of those who were instrumental in establishing cheese factories in the western part of the province were those of Thos. Ballantyne, Chadwick, Caswell, Facey, Farrington, Galloway, Hopkins, Lorec, Malcolm, Matheson and Millar. These men, together with Messrs. Graham and Wade in Eastern Ontario, did pioneer work in establishing the cheese business, but they soon found themselves up against problems they could not solve. What should they do? We have frequently heard the late Thos. Ballantyne tell how they were almost at their wit's end to know what to do to remedy defects in the cheese. They heard of a Prof. Arnold over in York State who had rendered valuable service to the State cheesemakers. So they sent for Prof. Arnold to come over and help them. Mr. Ballantyne said, "Arnold knew nothing about practical cheesemaking, but he did know something about the scientific part of dairying and was of real help to the cheesemakers in putting them on the right track," as he used to express it. Thus science and practice were needed to solve the cheese problems of those days, just as they are needed to-day. These cannot be divorced in any system of dairying without disaster following in a short time.

After Prof. Arnold came J. B. Harris. We remember meeting Harris a number of times in Western Ontario factories. Harris was the first regular traveling instructor employed to go about the factories through the cheese season to aid factorymen to overcome difficulties. He devised the first rennet test—very crude, it is true, merely a cup and teaspoon, but it was about the first step in enabling the cheesemaker to obtain control of the milk acid, which is the most important problem in Cheddar cheesemaking. Previous to this test makers depended upon the senses of taste and smell in order to determine when the milk was sufficiently ripened for the addition of the rennet. As the old "stirred-curd" system was then followed it was very important that the acid should not get the start of the maker, otherwise his cheese would be "sour," which was a common trouble in those early days.

From one Instructor in those times to between thirty and forty at the present time, shows how this Instructor and Inspector business has grown. This growth has been largely brought about through the active work of the dairymen's associations, the first of which was formed at Ingersoll in 1867. Ten years later, 1877, the Association was divided into two organizations, from which there have been various offshoots from time to time, but the present tendency is to form one association for the whole Province. Various proposals of marriage have been made, but shyness, or some other obstacle has prevented the union taking place. We may well consider whether or not the whole system of Instruction and Inspection should be reorganized, the mouldering branches lopped off, the barnacles cleared from the keel of the dairy ship, and more attention concentrated on the farm end of the dairy and chese business. It is doubtful if our cheese-makers need the constant attention which was necessary in the past, provided they are supplied with reasonably good material and a suitable place in which to manufacture cheese.

Improvements in Methods of Making Cheese

The first marked improvement was the substituting of steam heat, for the old-fashioned furnace vats, in which the milk was warmed and the curd cooked by lighting a fire under the milk vat. This was a slow, cumbersome, laborious, dirty method of applying heat, and besides there was the danger of scorching milk or curd by having the fire too hot. Whoever suggested the steam boiler connection to vats for cheesemaking deserves credit for so great a convenience. Owing to its simplicity and labor-saving features, it is a wonder someone had not thought of it much sooner.

The second point of improvement was the matting or cheddaring of the curd after dipping, and afterwards milling the curd, in order to improve the body and texture of the cheese, and also to get better flavor in the cheese.

The introduction of seamless bandage was a great saving of labor for the women connected with the factory, whose duty it was to make the required number of bandages from cheese cotton, sewing them by hand or on a machine. Along with this came the use of head-cloths or cap-cloths which were left on the ends of the cheese to prevent cracking. Before the advent of cap-cloths the ends of the cheese had to be greased with dairy butter or with skimmings from the whey tank which were boiled to purify them. Nearly all the factories kept an iron kettle near the whey tank where the "grease" was boiled, then allowed to cool for greasing the ends of the curd. This was unsanitary and meant considerable labor for the cheesemaker or his assistant. Greasing cheese, making rennet from calves' stomachs, and sewing bandages are things of the past. The commercial extracts of rennet have now almost entirely replaced the old-fashioned plan of killing calves two or three days old, removal of the hide by horse-power, removal of the stomach by hand, when it was emptied, turned inside out, sprinkled with salt after inserting a

shingle to keep it in shape, then hung up to dry in some outhouse. When the cheesemaker wanted rennet, he soaked a number of these dried stomachs in brine. The strength varied a great deal, hence this crude system has been entirely replaced by modern commercial and scientific methods.

The acidimeter has largely replaced the rennet tests and hot iron method of testing acidity of milk and curd. The acidimeter is based on chemical laws, and hence the cruder tests must give way to the scientific. The introduction of the acidimeter in cheesemaking was a marked step forward.

The milling of the curd before the "breaking-down" process had gone too far caused a saving of fat. In early days the milling took place just before salting. This ruptured the casein holder of the fat, and consequently the cheese was leaner and less cheese was made per 100 lbs. of milk.

Colored or White Tastes

Th use of less coloring and less salt has improved Canadian cheese. At the present time about thirty per cent. of the English consumers prefer colored cheese to white or uncolored. Not long ago these figures were reversed. The use of coloring material in milk for cheesemaking is more or less of a fraud on the public, but the public, especially in Canada, seems to prefer the colored goods, so cheesemakers bow to the demands of the public. Cheese coloring covers a multitude of defects and carelessness, but is also a source of danger, owing to mottling and discoloration.

Formerly from 3½ to 5 lbs. salt were added to the curd from 1000 lbs. milk, in order to remedy defects of raw material or in the manufacture, consequently many of the cheese were harsh and dry, or what the English dealer calls "bony." The tendency at present is to use from 2 to 3 lbs. salt per 1,000 lbs. milk which means more moisture retained in the cheese, and a more "silky" texture which better pleases the consumer.

Ripening or curing of the cheese at a much lower temperature than formerly was thought advisable, may be mentioned as another marked improvement in cheesemaking. From 60 deg. to as low as 40 deg. is now recommended. Also paraffining of the cheese when about the week old, to retain the moisture, and prevent loss by shrinkage is a common practice, especially when cheese are held for some time before selling. The retailer in England has done some grumbling about these cheese, claiming there is too much waste, but on the whole the practice of paraffining cheese is commendable.

From the farmer's side, the use of tin pails for milking, instead of the "patent" or wooden pail, the simple cooling of the milk in tanks of cold water without aerating or any of the fixings formerly recommended, and the pasteurization of the whey at the factory before returning it to the farm, may be mentioned as a few of the improvements in the cheese era affecting the farm end of the business.

The pasteurization of whey at the factory reduces the danger of spreading organisms or bacteria which cause bad flavors in milk, such as the yeast flavor so troublesome in certain districts; prevents the spread of tuberculosis germs from factories to clean livestock on the farms, causes a more even distribution of the fat in the whey returned to farms, prevents the whey souring too much before feeding, makes the cans more easily washed at the farm, causes the whey tanks to be cleaner and more sanitary, and results in a better quality of cheese. All these advantages are obtained at a cost of 50c to a dollar per ton of cheese, therefore no factory ought to neglect this marked improvement in the management of modern cheese factories.

Testing and Payment for Milk at Cheese Factories

In case of adulteration it was necessary in the early days to prove actual addition of water to the milk or removal of the cream from the milk. This was not an easy matter, hence factory managers or cheesemakers had to play the detective by hiding around barns, strawstacks, or in fence corners in order to witness the adulteration in order to prove a case in court. Many a man has shivered on a cold autumn morning as he waited for the tardy milkers to appear, and often had his trouble for nothing. While there have been farmers who adulterated milk, the number is surprisingly small, compared with the large opportunities offered, and the comparatively little risk run in detection. Farmers are, for the most part, honest, and undoubtedly men who were innocent have paid a fine rather than suffer the publicity incidental to a trial. The writer has been personally assured that this was the case in a number of instances, and we believe the party was telling the truth. However, there have been cases where adulterated milk has been delivered for the manufacture of cheese, and all such deserve the penalty of the law.

This leads up to the question of "Why not pay for milk at cheeseries by test?" Why not? There are various reasons for the fact that the majority of cheese factories pay patrons according to the weight of milk delivered. Among them may be mentioned:

(1) It is easier, simpler and less expensive to pay by weight of milk.

(2) Patrons do not like to make a change. They prefer to walk in the old paths their fathers trod.

(3) Patrons do not have faith in the test or the person making the test. It is undoubtedly true that the test is, to a certain extent, a whip, a scorpion in the hands of dishonest persons, and the farmers have suffered because of this dishonesty.

(4) Scientific authorities are not agreed as to what test is best, hence the man on the farm prefers to wait awhile until the scientists settle this question before they have anything to do with it.

Because of all this the farmer has played a "waiting game," and the introduction of the test lingers, or in many cases has been discarded after one or more years' trial.

The writer's position on this question is somewhat as follows: There is a difference in the cheese yielding values of normal milks. This difference is fairly well measured by the casein-fat content of the milk, therefore a testing system to be accurate and just must be based on the casein-fat solids. These can now be determined in milks by several reliable methods, such as the Babcock for milk-fat and the Hart or Walker for casein, or by the new method worked out at the O. A. College, whereby the combined casein and fat are determined at one operation, at small cost. Milk-fat alone is not a measure of the value of milk for cheesemaking, nor for any other purpose except that of making butter. Compromises on this principle may be made and may be advisable in certain cases, but in the final analysis the principal of determining the fat of milk or cream for buttermaking, and of both the casein and fat of milk for cheesemaking must be accepted. No other can be acceptable to the person who has made a careful study of the question and

A dairy herd of Jerseys in Ontario County on their way to the milking machine.

wishes to arrive at a sound and equitable basis for distributing money among patrons of co-operative creameries and cheeseries. If this principle be not correct, then the whole science of milk composition and its relation to the manufacture of cheese and butter falls down, and so far as the writer is concerned, if anyone can prove that this is incorrect, then he is prepared to "chuck" the whole business of scientific dairying, and agree with the man-on-the-street, "there is nothing to it."

Selling the Cheese

Up to the present, farmers have not given very much attention to the selling-end of farm operations, but they are finding that this is a mistake. The battle is only half-won when an article is produced. The most important part of the struggle is yet to come. The Light Brigade, the Infantry, and the Artillery must all charge if a farmer would obtain a fair price for his goods. It is at this point that the question of profit and loss is largely decided. Farmers, as a rule, are not good salesmen. The very conditions on the farm are such as not to develop the highest type of business shrewdness, which is essential to good marketing.

Farmers, as a class, are too much inclined to take what is given them, and appear to be thankful that it is not less. There are, of course, marked exceptions to this general statement, but in the main it is correct. There has been a great bowl lately about selling "green" or "hoop" cheese. One would think the farmers to blame according to reports. But who are the chiefest sinners in this respect? Certainly not the farmers.

Previous to 1873 the cheese were chiefly sold by what has been called "the Hole and Corner Method." By this plan the Cheese Buyer endeavored to get the Cheese Salesman in a "Corner" and then leave him in a "Hole." In 1873 Cheese Boards of Trade were established in various cheese centres, and on certain days of the week buyers and salesmen met to dispose of the cheese by auction. Various forms of selling were adopted at the Boards, but the principle was the same in all—the cheese were sold or were supposed to be sold to the highest bidder. Rules and by-laws under Government restrictions and regulations were adopted, and so long as the cheese were actually sold on the date and in the place of public meeting, it was a satisfactory system—the best that has ever yet been devised for selling cheese or any other farm product in large quantity. But it was soon found that certain factories were selling "off the Board," or at a premium on Board prices, and although various plans were adopted to prevent this, such as fines, etc., it was not practicable to prevent by-selling, and the Cheese Boards to-day are, for the most part used as "feelers of the market," and the bulk of the cheese is sold independently. This has resulted in an advantage to the Cheese Buyer and to the disadvantage of the Cheese Seller. We have neither time nor space to go into this phase of the question more fully, but we believe the foregoing fairly sums up the situation of cheese selling at the present time. Whether or not a better system is practicable, we are not prepared to say, but it would look as if some change were necessary in order to get a "square deal" for the farmer.

Present and Future

We have been writing chiefly of the past. What of the present and future of the cheese industry? The statistical position of the export cheese trade is not strong. Exports are declining year by year, until we are now supplying but a little over fifty per cent. of British cheese imports, whereas a few years ago Canada supplied about 75 per cent. of this trade. We are told that there is nothing alarming in these figures, that we have simply turned our attention to other lines of dairying. This might be a matter of consolation were it not also a fact that the number of cows in Ontario has decreased over 100,000 from 1907 to 1911, the latest figures available. Whether or not cheese will ever gain its former strong position among agricultural products is doubtful—certainly not unless there is an advance in price to the producer of cheese milk as compared with recent prices paid at factories. One dollar per 100 lbs. milk, which is about the average price paid patrons of cheeseries during the past five years is not enough to make the business profitable, except on farms where land and labor are cheap. The methods which may be adopted to increase the net price of milk to the producer, assuming that he has good cows fed as economically as possible are, to reduce the cost of manufacturing and selling, and increase the ultimate price. As manufacturers and sellers say the business is now conducted on the lowest possible margin under present conditions, it means either change of methods in making and marketing, or raising the price. It would seem that if the cheese were made in larger factories under more skilful management whereby manufacturing costs would be reduced to a minimum, and losses avoided to a greater degree, combined with a system of marketing whereby manufacturers and consumers would deal more directly with each other, that the saving to the farmer might easily amount to one cent a pound on the cheese made. In addition, if the consumer were willing to pay a price equal to the food value as found in other food products, for instance meat, the price of cheese might easily be advanced another cent per pound.

Prof. Harcourt of the Chemical Dept of the O. A. College has shown that cheese at 17c per pound, furnishes for one dollar, 12,593 units of food value, whereas the same amount of money spent on beef at 18c per pound purchases but 5,509 units of food value. In other words, cheese at 17c per pound furnishes 2½ times more food value than does beef at 18c per lb. At the same rate of food values cheese purchased at 40c per lb. is cheaper than beef at 18c per pound. There is also the question of labor and cost of cooking beef as compared with no labor for cheese. We recognize that personal tastes are an important factor in the question of foods which must be taken into consideration, and that more persons would prefer a pound of beef to a pound of cheese, but there is no reason why people should not eat both beef and cheese, or more cheese than beef, if the tastes were properly educated and the food value of cheese were properly understood.

Our cheese producers and sellers ought to start a campaign similar to the breakfast food manufacturers and we should soon see a very marked increase in the demand for cheese. Let nothing but the finest Canadian Cheddar cheese be sold in Canadian grocery stores, instead of "cull" cheese, accompanied by judicious advertising in the way of free samples, liberal use of space in journals and papers, then we should soon see the cheese trade revive, and our cheese-milk farmers receiving a paying price for their milk. These are days of advertising, and the cheese business must fall in line, or go to the wall. It is seldom we see an "ad." about the value of cheese, or calling the attention of consumers to cheese as a food. Nearly every other food product entering into the dietary of civilized man is advertised everywhere, but outside of condensed milk and ice cream (and this accounts for the wonderful growth of these two dairy lines) dairy goods are not advertised. It has been assumed that people will drink milk and eat cheese and butter without calling attention to their merits. This is an altogether mistaken view. Reasoning by analogy, one would think it wholly unnecessary to tell people "to be good," they ought to know enough to do this without being told; the fact is we are spending millions of dollars annually for the purpose of trying to get people "to be good," and some of the brightest talent in the world is employed for this purpose, and these people are paid high salaries for their work. Thousands of editorial writers and writers of books are employed to awaken men's minds to the importance of doing what is right. Publications by the hundred are turning out pages of material week after week for a similar purpose. All this costs an immense sum of money annually, but we do not grudge the money. It pays. Would it not also pay to do some advertising, and awakening of the public mind with reference to cheese as a food, particularly for the workingman?

In our experience we have found that among farmers it is possible to work up a good trade for cheese. A few years ago the farmers who supplied us with milk at the Dairy Department of the College seldom asked for cheese and we had to find a market elsewhere. By supplying a few with good cheese at a reasonable price we soon worked up a trade until at present we cannot supply all our would-be customers at a price from two to three cents a pound above the average wholesale price of cheese. If two or three cents per pound of cheese were added to the present price which

farmers receive for cheese milk it would make the difference between profit and loss and put new life into the business. It can be done if someone with enterprise and some capital will enter upon the campaign here in Canada to enlarge our home markets. Similar methods could be adopted in the foreign trade, but the first move should be made at home, although there is an element of danger in allowing our present foreign trade to slip away from us too far—we may not be able to regain it, or the cost may be too great to replace the present machinery. These are points which would need careful consideration.

On the whole the present system of the Canadian cheese trade is none too optimistic, and many consider that we are practically at the end of an era that has had a wonderful effect on the Dairy industry of Canada. Many are now looking towards the future or third era with hopeful faces.

Hogging Down Corn

Lobor Saved and Profits Increased by Teaching the Hog to Fatten Himself in Nature's Way

By ROY H. ABRAHAM

The economy of this method of hog-feeding followed in the corn belt of Ontario will commend itself to many of our readers who spend an hour or two every day and several dollars' worth of grain in pen-feeding. While the writer specifies that feeding hogs in the corn-ripening counties is an entirely different proposition from that in any other part of the Province, and that this feed produces not the bacon type with their sweet Wiltshire sides, but the fat lard-type of hogs, there still remains the fact that the hog might be turned out to harvest his living during the first few months of his life with good results.—Editor.

FOR the economical production of flesh the hog stands head and shoulders above all other animals. He posseses the peculiar power of making a pound of grain produce the most flesh. From personal experiments I find that it takes from six to eight bushels of corn to produce one hundred pounds of gain on a hog. To produce the same gain in beef, it requires from 10 to 16 bushels and other food in a like proportion, according to their feeding value; but it is not in cheapness of gain that his chief economical value comes. The hog is an animal that thrives well on almost any kind of food.

The hog industry in the corn ripening districts of Ontario is rather a different industry from what it is in other parts where corn cannot be ripened. It is here that we find the hog predominating over other kinds of live stock. Farmers here are farming apparently to demonstrate the old saw: "To grow more corn to feed more hogs to buy more land to grow more corn to feed more hogs."

A few years ago a hog's place on the farm was inside the four walls of a pen and if by chance he managed to escape the whole family were immediately aroused in order that he would not destroy the crops. To-day it is universally recognized that what a hog eats is not wasted: that the less work the farmer does in caring for and feeding, and the more work the hog does, the more profitable the industry. He is, therefore, truly the king of the farm, having the run of pasture fields, stubble fields, wheat fields, hay fields, corn fields, pea fields and root fields alike. It is by no means an unusual thing in the corn and wheat belts to see 50 to 60 hogs harvesting their own feed.

These pigs are free agents. They pick up the greater part of their feed from what would otherwise go to waste.

Mr. Chas. Agar of Kent, Ont., might be said to be the father of the hogging-down-corn method. Scarcity of labor forced him to allow the pigs to help themselves when he could not feed them and it was a common thing for men who were passing, to drive in and inform him that the hogs were destroying his corn field. Mr. Agar learned through necessity a lesson in hog raising that has since saved him hundreds of dollars. He found that when he made an estimate of the cost of fattening that bunch of hogs fattened in nature's way, they proved to be the most profitable hogs he had ever raised. After making a fair estimate of the yield of corn and a fair estimate of the gain on the hogs, he found that they had made greater gains than if the same number of bushels had been fed them of husked corn in a pen, without the labor of feeding, and husking, to say nothing of the cutting or hauling and the cribbing, and manure-hauling back to the fields. To-day his method of fattening hogs is almost entirely followed by the best farmers of the corn belt.

Feeding hogs in the corn ripening counties is an entirely different proposition from what it is in the rest of the province. These sections are not dairy sections, therefore the hog raiser has to feed independent of milk. He has large quantities of the finest fattening food in the world at his disposal. He grows, therefore, not the approved bacon type with their sweet Wiltshire sides, but the fat lard type, which are admirably suited to his feed, like the Poland-Chinas of the Middle States. It is true, his methods will appear to the pig-pen farmer as crude indeed; but there is no doubt that he is, in his own way making the industry pay handsome dividends without much actual work.

Brood Sow Selection

In raising hogs the selection of a brood sow is the first factor to be considered. It is of greater importance that the mother be individually good, than that she be of any particular breed. In some sections too much stress is laid on the breeding and in many cases mothers are used because they are thoroughbred. Breed and breeding should be secondary considerations, that is constitution, temperament and prolificacy should be first. There is no doubt that the chances of securing a good sow are greater where the herd ancestry as given in the pedigree of pure-breds is easily known.

After breeding a sow she should be fed good wholesome food, rich in flesh-forming material. Corn should not be fed alone at this stage as it will tend to

The old idea, pen-fed hogs, where the farmer did all the work of feeding.

weakness in the offspring. A good feed for sows at this period would be four parts chopped oats or shorts mixed with one part corn, peas or barley. Roots would also make a good addition to the sow's ration. Besides supplying protein they act as a tonic.

The care of the young and mother is of great importance especially where cow's milk is not available. It is at this stage that the future success of the young is made possible. Continue feeding the same ration of food to the sow as before the birth of the pigs, only in in increased quantities. As soon as the pigs are a week old they will commence to nibble at their mother's food. An opening in the pen should now be provided so that the young can run out and in at will and on the outside place in a small trough some ground oats or shorts so that the pigs will learn to eat independent of the mother. Then when you want to wean them don't, it is much better to wean the mother. Leave the little ones in their small old haunts where they have been accustomed to feed. When the mother is removed and the young not disturbed they do not receive the same set-back as if removed to a new pen themselves where everything is new and strange. If milk is available a little mixed in chopped oats is of great value, but if not four parts of oats and one part of corn chopped makes a very palatable food. In feeding chopped oats care should be taken to feed as little of the hulls as possible. They can be removed by screening or by mixing with water in a pail where they will float to the top and can be poured off. Continue feeding the ground corn and oats, increasing the proportion of corn as they get older. They can be turned into the standing corn about Sept. 15th to 20th, and can remain there until almost Christmas. When in the corn field a few roots or ground oats will be found to be a valuable supplementary food.

Saving in Winter Feeding

Winter-fed hogs are fed in a number of different ways. Many again make a saving in labor by cutting the corn with a binder, when dry stacking it in long narrow stacks (not wider than ten feet to prevent heating) and feeding it to hogs, stalks and all, the stocks being worth about what it would cost to husk the corn; but even the stalks can be saved for the cattle if a feed floor is provided of plank or concrete. After the pigs are through feeding, remove the stalks and feed them to the cattle. By being careful to clean the feed floor after each feeding, and keeping the floor dry, there is absolutely no waste. Pigs fed in this way do much better than if fed husked corn. In the winter time most pigs do not get enough exercise and when fed ear corn, they are apt to bolt their food too fast, or sometimes eat too much. In feeding the unhusked corn the pigs have to work to find the ears. It prevents bolting; it also prevents over-feeding. A hog is a hog and being such he is sometimes apt to eat too much if it is there tempting him, and as a consequence "go off his feed" for a few days. When feeding corn in the stalks this never happens, as, when he has enough, he, not being tempted by the sight of more, does not look for more and stops eating at the proper time.

With the average price of hogs in the last five years ranging around $8.50, and the price of corn around 65c., with the possibility of manufacturing one pound of flesh that is worth 8½c. out of five pounds of grain that is worth 1c. per pound, with the rapidity with which he can convert farm produce into cash, with the immense amount of food he consumes on the farm that would otherwise be wasted, with the popularity of Canadian bacon in foreign markets increasing and the home market asking for more than we grow, the prospects of the hog industry in Canada are very bright indeed.

As a food for man the hog has been known for many thousands of years. The farmers of many of the ancient countries recognized his economical value as a food producer; but bringing him into prominence must be to the credit of the Irish. It was in Ireland that he first lived as an equal with man; that he developed from an animal with immense forequarters, great head, long tusks and flowing mane, into what we know him to-day, the gentle, sleepy, docile, sleek, grunting, fat, deliciously-flavored porker.

Makes Money at $5.00

When Mr. Agar first went into hog raising, hogs were only $4.50 per hundred live weight. His farm of 150 acres was run down and mortgaged to the full extent. He declares that at that time he was not worth one dollar. Since that, through growing hogs, he has wiped off the mortgage and started his son on a good farm and has himself been able to retire.

It cannot be said that Mr. Agar was by any means the largest hog-raiser in that district, but it is doubtful if many more farms of the same size have turned off as many hogs in the same period as did Mr. Agar. For a number of years he kept from 18 to 24 brood sows; sold from 300 to 400 hogs each year, which brought him in a revenue of $3,000 to $4,000.

That Mr. Agar was a thorough hogman is proven by the fact that there was no grain on the farm that was too good to feed to the hog. Corn, oats, wheat, barley, peas all found their way into the stomach of the pig, and were eventually sold as pork. The principal feed used was corn, of which he grew each year from 70 to 100 acres.

Mr. Agar has declared that he made money out of hogs when they were worth less than $5.00 per hundred weight, and when corn was worth 40 cents.

On the way to market.

Permanent Pastures

In Canada last year there were 8,169,000 acres in clover and hay. There are many times this acreage in rough and broken pasture lands. If the returns from these could be increased by even half a ton of green fodder per acre, the saving to the farmer would be immense.

The presence of abundant forage is largely due to proper seeding. Where no seed is sown there can be no hay or grass. Often it will pay to sow broadcast on old stony, broken, or otherwise rough pastures a good mixture of seeds in the early spring or before a rainstorm.

Where cultivated land is intended for a permanent pasture, the following seeding answers well:—A mixture of 3 lbs. timothy, 2 lbs. red top, 4 lbs. mammoth red clover, 2 lbs. alsike, and 1 lb. white clover, furnishes both tall grasses for a cutting of hay and the fine bottom for grazing purposes.

A prosperous stretch of small farms in the Eastern Townships.

How Much Machinery For 50 Acres?

Diversified Husbandry Can be Carried on with Little Outside Labor

By WALTER JAMES BROWN

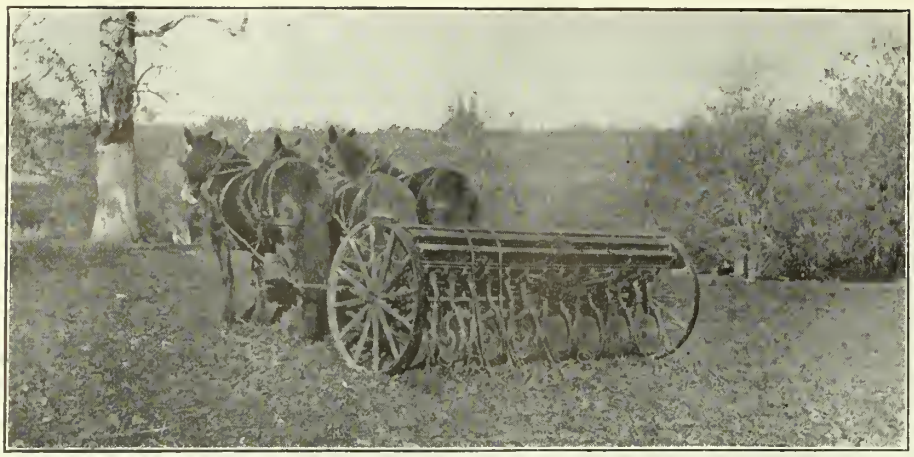
To the man on the fifty-acre farm, the machinery problem presents more difficulties than it does to the farmer who cultivates enough land to make every modern labor-saver pay for itself. In this article the writer has gone rather thoroughly into the question of what equipment the fifty-acre farmer really needs and what he can do without. The co-operative purchasing of the more expensive pieces of machinery is a question worthy of consideration in a neighborhood of small farms.—Editor.

THOSE who are familiar with history know that the introduction and improvement of implements have revolutionized agriculture. The more perfect farm machinery becomes, the better it is possible to make the system of husbandry and the greater the results secured from a given area of soil. Farm machinery means the saving of hand labor and more rapid and generally more thorough work done. This is all admitted; but it must be conceded also, that the buying of farm machinery today is one of the big leak-holes in the pockets of the vast majority of the farmers of Canada and the United States. The reason the purchase of implements and machinery is so costly to the farmer is that he does not take care of such machines after he gets them. There is another reason why machines cost a great deal of money. The manufacturers of agricultural implements are created and supported by a protective tariff. In considering the question of the machinery necessary for a 50-acre farm the writer proposes to keep in mind two factors, namely, efficiency of farm practice and the employment of the minimum of outside labor. It is the purpose also to show how the implement and machinery bill may be reduced to the smallest amount according to the methods followed.

A farm of 150 to 200 acres is, from the standpoint of machines and implements required, the most economical; but one man cannot work to advantage a farm of this size without employing sufficient help throughout the year, and farm help is difficult to get. A 50-acre farm under a system of diversified husbandry can be worked by one man with very little outside labor. It would pay thousands of farmers in eastern Canada to sell their surplus land and confine their energies to 50 acres only. The necessary wagons and implements for 150 or 200 acres of land devoted to general farming, the raising of live stock, etc., cost from $800 to $1,000 to purchase new. It is understood, of course, that only the essential implements are secured and that they are of good quality. It does not pay to buy an implement that may be used only a few days in the year or to buy a cheap implement. On a farm of less than 150 acres it is rarely advisable to purchase a complete outfit of implements and machinery such as one may secure to-day. So far as power-driven machinery in the buildings is concerned, this will depend on the size of the farm and the nature of the industries carried on by the farmer. For a 50-acre farm power-driven machinery would be limited and the implements for use in the field would be few in number.

Farm machinery means the saving of hand-labor and more rapid and thorough work.

Investigations have shown that on the average farm all kinds of machinery and implements are badly treated. Common observation will convince any one of the truth of this statement. Go out into the rural districts or drive through your own neighborhood and note the number of farm implements standing in the fields over winter, or look around the barns and lanes and count the mowers, binders, hay rakes, harrows, ploughs, seed drills, manure-spreaders, etc., exposed to the weather. Farm implements are not housed and instead of lasting twenty years, as they should if they were well cared for, they last about five years on the average. This means a depreciation of 20 per cent. per annum. The cost of repairs and the loss of time due to breakages during the busy seasons add considerably to the outlay. If it costs a farmer $1,000 to equip his farm with



Combination disc-seeder. The discs run along just in front of the sprouts to loosen the ground well for the seed.

machinery and implements and he loses $200 a year in depreciation and $50 a year in interest on the capital invested then he should add $250 a year to his computed cost of cultivating, seeding and harvesting crops. For $250 he could probably build a tool shed 40 feet long, 20 feet wide and 10 feet to the eaves that would house all his implements. There are approximately 500,000 farmers in this country and if the average loss be $200 per farm, through neglect of farm machinery, then the manufacturers of this Canada of ours have a market at home worth $100,000,000 a year. If we think this is too large we may divide it in half and still have a market yielding to the implement makers of this country $50,000,000 a year. What would be the effect if the farmers decided to-day to stop this leak-hole? About six years ago the International Harvester Company is said to have sold between $7,000 and $8,000 worth of self-binders in a certain district in western Ontario and last year the general agent prepared a duplicate shipment for the same district. He was very much surprised when the local agents refused to accept the machines. He made a personal visit to the district and inspected every one of the binders purchased five years before. He found that, instead of some other firm getting the business as he suspected, the binders were all intact and were apparently good for years to come. The reason was that in every case the farmer housed his machinery and took care of it. The general agents of several firms were discussing this incident on a railway train not long ago and one said: "If all the farmers of this country would take good care of their implements and machinery; as the manufacturer takes care of his, I believe that the cost of agricultural machinery of all kinds would be at least one-third less and perhaps half of the manufacturers would have to close down or seek a market elsewhere."

In order to decide how much machinery, etc., a man needs for a 50-acre farm it is necessary to know what he is going to do with the farm. To make the question easy let it be assumed that the farmer lives in a dairy district and intends to sell milk. As the farm has only 50 acres, we may allow 10 acres for wood lot, lanes, yards, orchard, garden and hog pasture. There will then be 40 acres to divide into four fields or 10 acres each. These fields will be put under a 4-course rotation, say corn, oats or oats and barley, meadow, and pasture. The manure will be put on the pasture during the winter and turned under in the spring for corn. The 10 acres of corn, if put into a silo, should yield from 90 to 120 tons of ensilage, the oats and barley about 400 bushels of grain and perhaps 12 to 15 tons of straw. The meadow should give 20 to 30 tons of hay; but the pasture will not support more than say five cows. It will be possible, however, by feeding ensilage and hay during the day, and pasture only at night during the summer, to keep 10 or 12 good cows, two horses and a brood sow. It will probably be necessary to purchase some cotton seed meal, oil cake and other concentrated foods. The garden, orchard and two litters of pigs would pay the expenses and provide the major portion of the family living. This would be easier to accomplish if 100 good laying hens were added to the live stock. The income from the cows should pay the interest on the investment and good wages in addition. If 12 cows were fed 40 lbs. of ensilage each day for 365 days they would have some difficulty in consuming 90 tons. It will be possible, therefore, to raise some young stock as well. On such a farm, under the system suggested, the machinery required would be as follows: 1 walking-plough, 1 disc harrow, 1 roller, 1 smoothing-harrow, 1 corn cultivator, 1 hay-rake, 1 hay-fork, 1 fanning-mill, 1 platform scale, 1 cream separator, 1 farm wagon, 1 light road wagon and 1 buggy. It will not pay to buy a grain-binder to cut 10 acres of grain a year, or a mower to cut 10 acres of hay, or a corn-harvester to cut 10 acres of corn for the silo, or a seed-drill to sow 10 acres of oats or oats and barley, or a manure-spreader to draw out and spread the manure on 10 acres during the winter and early spring. These machines, with the possible exception of the manure-spreader, can be hired at reasonable rates. It will cost less to hire them than to buy and house them. The only machinery a 50-acre farmer should keep is the machinery he cannot get along without, and that he can properly house and care for. The only help he will need outside of silo-filling and threshing, which are usually done by exchanging work, will be drawing in hay and grain. A riding two-horse corn cultivator might be a wise investment as its use would probably increase the corn yield by 25 per cent.

If the farmer on a 50-acre farm did not care to milk 10 or 12 cows a day he could buy steers in the fall and feed them for six or seven months and secure a good profit. The only change necessary in the management of his crop rotation would be to cut the second grass field for hay instead of pasturing it. In this case it would pay to buy a mower. Twenty-five steers feeding 180 days would require about the same feed as 12 cows during the year. The margin of profit in finishing steers depends on the difference between the buying and selling prices, the ability to buy only "good doers," and the skill in feeding.

If the 50-acre farm were suitable for sheep and were divided into say six fields of about seven acres each—this seems to be the usual plan on small

(Continued on page 70.)

The farmer with ten acres of hay can usually hire a rake at a reasonable rate.

Spanish Gold

A Story of a Search in Ireland for Hidden Spanish Treasure Where the Quaintest of Humor Pervades a Pleasing Romance

By GEORGE A. BIRMINGHAM

CHAPTER VIII.—Continued.

"It's about sugar candy," said Higginbotham.

"Great Scott!" said Meldon. "Mary Kate!"

"I don't know anything about Mary Kate, but all the children on the island have been following me about and bothering the life out of me for sugar candy. They say you set them on."

"Look here, Higginbotham," said Meldon severely. "The Major and I are busy men, whatever you may be. If you're in any real trouble, we're quite ready to do our best to pull you through, but I don't think it's fair of you to come here wasting our time over some trumpery business about sugar candy."

"But the children said you sent them to me."

"It's all well enough for you to be fussing and agitating in this way about mere trifles, but I have serious matters on my mind. I simply haven't time to waste over sugar candy. If the children have taken your sugar candy, see their parents about it and get them properly whipped. You can't expect us to go about taking sticky stuff out of their mouths to gratify you."

"I didn't say they'd stolen my sugar candy. They haven't. What I said—"

"Very well, then, what are you making all this row about? Do you mean to suggest that we took your sugar candy? Neither the Major nor I ever eat sugar candy. If you set half a pound of it down on this table now, and invited us to gorge, we simply wouldn't touch it. Look here, Higginbotham, you and I are old friends, and you often used to go up to Rathmines with me to see my little girl, so I'll just give you a word of advice that I wouldn't give to a stranger—if you want to get on with the people on this island, don't go quarrelling with their children. There's old Thomas O'Flaherty Pat, for instance, as decent an old fellow as I ever met, and quite easy to make friends with. He went out to-day, quite off his own bat, without so much as a hint from me, and caught a crab and gave it to me. Anyone with a grain of tact could get on with poor Thomas O'Flaherty Pat. As quiet a man as you'd see anywhere. But you go and rub him up the wrong way, get his back up, and generally play old hokey with his temper by nagging at his granddaughter about some barley sugar."

"It was sugar candy," said Higginbotham, feebly; "and besides——"

"Well, sugar candy, then—it's all the same. It wouldn't make any difference if it was peppermint lozenges. You worry and threaten the poor child about a pennyworth of some ridiculous sweetmeat, and then you profess to be astonished that the old man won't give up his house to you. I'd have been much surprised indeed if he did under the circumstances. No man likes to have his grandchildren ragged. You wouldn't like it yourself if you had any. And a little girl, too! Higginbotham, you ought to be ashamed of yourself."

"If you'd let me speak for a moment," said Higginbotham, "I'd explain."

"You're far too fond of speaking," said Meldon. "Half your troubles come from talking too much."

"But you've taken the thing up wrong. I'm not blaming you. There's a mistake somewhere, I know. I wish you'd let me say one word."

"I can't and won't spend the rest of the day arguing with you about sugar candy. It wouldn't be for your own good if I did. Are you aware, Higginbotham, that there are two English members of Parliament in that boat, anchored a few yards away, and that they've come here expressly to see how you are getting on?"

"How do you know that?"

"Well, I don't absolutely know it. But I can't imagine what would bring a member of Parliament to this island if it wasn't to inspect your work. They don't come here for the salmon fishing: you may bet your hat on that. Now, if you'll take my advice you would seize the earliest opportunity of smoothing down old Thomas O'Flaherty Pat before they get listening to his story."

"But the old man can only talk Irish."

"Don't you trust too much to that, Higginbotham. In the first place, I strongly suspect that he can talk English just as well as you can; and besides, you can't be sure that the members of Parliament don't know Irish. I can tell you there are some mighty smart men in Parliament now. It just happens, Higginbotham, that this morning, while you were chasing and ballyragging that unfortunate little Mary Kate round and round the island for the sake of a bit of sugar candy, I was having a quiet chat with Thomas O'Flaherty Pat. It just shows me the kind of fellow you are. You don't hesitate to come here bothering the Major and me with your wretched little grievances while I've been doing you a good turn in a really important matter."

"What?" said Higginbotham.

"I've a very good mind not to tell you after the way you've behaved. But I'll just say this much. You want old Thomas O'Flaherty Pat's house and bit of land, don't you? Very well, you go up there to-morrow at half-past eight and talk to him about it."

"Have you persuaded him to give it up?"

"I won't say another word. Just go up and see for yourself."

"I'm awfully obliged to you, Meldon; I really am. I'm sorry for bothering you about the sugar candy. I wouldn't have mentioned the matter to you only——"

"All right," said Meldon graciously. "Don't trouble to apologise. The Major and I don't mind a bit. But I'll tell you what you can do now. I have to go and call on the members of Parliament. Will you——??"

"There's no use doing that," said Higginbotham. "I saw them going ashore in their punt as I came off to you."

"All the same, I'll look them up," said Meldon. "I'm sure to find them somewhere about on the island. What I want you to do is to stay here and play chess with the Major till I get back."

He winked fiercely at Major Kent as he spoke.

"I know you play, Higginbotham, for you were a member of the chess club in college. You'll enjoy having a go at the Major. He's a perfect whale at the Muzio gambit. Very few men know the ins and outs of it as he does."

"I don't," said the Major sulkily;

Synopsis of Previous Chapters

The Rev. John Joseph Meldon, an Irish curate, and his friend Major Kent, are on a yachting trip to the Island of Inishgowlan, on the west coast of Ireland. Meldon, having read an old diary of the Major's grandfather, is convinced of the existence on the island of some hidden treasure concealed there by the captain of one of the vessels of the Spanish Armada.

On arriving at the island they meet Higginbotham, an old college chum of Meldon's. Higginbotham is surveying the island for the Government and rearranging the plots of land, but he cannot complete his work owing to the obstinacy of an old man named Thomas O'Flaherty Pat, who refuses to give up a small plot of ground on which he has built a hut, and which is situated in the centre of the island. Meldon and the Major explore the island in search of the treasure, and find that O'Flaherty Pat is following them everywhere. They manage to get rid of him and return to the yacht. Higginbotham arrives directly afterwards to pay them a visit. Earlier in the day Meldon, in order to get rid of some of the children on the island, had given one of them sixpence, telling them to go and buy some candy from Higginbotham, and not to believe him should he say he had not got any. Higginbotham has apparently come to ask for an explanation.

"and anyway, there isn't a chessboard on the yacht."

Meldon winked again, this time with fervent appeal.

"It's all right about the board," he said. I saw one in Higginbotham's house last night. I'll go ashore in your curragh, Higginbotham, and send it off to you. Good-bye. Oh! Before I go, Major, you might as well give me another sixpence in case I meet Mary Kate again. You may as well give it to me as be losing it to Higginbotham, making bets as to how one of your gambits will turn out."

There was no one on the little pier when Meldon reached it. He supposed, quite rightly, that those of the inhabitants of the island who were interested in strangers had gone after the M.P.'s. It seemed likely that Mary Kate had followed them. She was a child of inquisitive mind. He walked up to Higginbotham's house, obtained the chessboard, and sent it off in the curragh to the yacht. Then he made his way to the nearest cottage, knocked at the door, and entered. A young woman, bare-armed, with a thick stick in her hands, was pounding a mass of potatoes and turnips in a large tub.

"Good evening to you," said Meldon cheerfully. "Getting the food ready for the pigs? That's right. Feed your pigs well. There's nothing like it. Here, give me a turn at that stick. You look as if you were getting hot."

"It isn't the like of this work that you'd be used to," said the woman smiling.

"Oh, but I can do it," said Meldon, taking the stick from her. He pounded vigorously at the unsavoury mess for a while. Then he said, "Are you the woman of the house?"

"I am, your honor."

"Well, then, where's Mary Kate this afternoon?"

"Is it Michael O'Flaherty Tom's Mary Kate you'll be wanting?"

"How many more Mary Kates are there?"

"There's ne'er another in it only herself."

"Well, then, it's her I want. Where have you her?"

"She's no child of mine." said the woman. "I haven't but the one, and he's beyond there in the cradle. If she was letting on to your honor that she belonged to me she was just deceiving you. Faith, and it's not the only time the same little lady was at them sort of tricks. I hear that herself and the rest of the children had the life fair bothered out of the gentleman that does be measuring out the land, about sugar candy or some such talk."

"I wouldn't wonder at her," said Meldon; "but where would she be now, do you think?"

"She might be off chasing home the brown cow and the little heifer for her da."

"And where would the brown cow be?"

"Faith, that same cow is mighty fond of roaming where she's no call to go."

The woman stepped outside her cottage door and peered up and down. "Come here now, your honor, and leave off mashing them turnips. If that isn't herself with the brown cow in front of her and the little heifer beyond there over by the wall, it's mighty like her."

"I'm much obliged to you," said Meldon. "Good evening."

He crossed two stone walls, waded through a boggy field, and came within hail of the child who drove the cattle.

"Mary Kate!" he shouted. "Hullo, there, Mary Kate O'Flaherty!"

She turned and looked at him in wonder. Then, recognizing the giver of the sixpence in the morning, grinned shyly.

"Mary Kate," shouted Meldon again, "will you come over here and speak to me? Leave those cows alone and come here. Do you think I've nothing to do only to be running about the island chasing little girleens like yourself?"

But Mary Kate had no intention of leaving the cow and the heifer. With a devotion to the pure instinct of duty which would have excited the admiration of any Englishman and a Casabianca-like determination to abide by her father's word, she began driving the cattle towards Meldon. Four fields, one of them boggy, and five loose stone walls lay between her and the curate. There were no gates. Such obstacles might have daunted an older head. They didn't trouble Mary Kate in the least. Reaching the first wall she deliberately toppled stone after stone off it until she had made a practicable gap.

The cow and the heifer, understanding what was expected of them, stalked into the field beyond, picking their steps with an ease which told of long practice, among the scattered debris of the broken wall. Meldon, with a courteous desire to save the child extra trouble, crossed the wall nearest him. Mary Kate dealt with a second obstacle as she had with the first and reached the boggy field. The cattle, encouraged by her shouts, floundered through, drawing their hoofs out of the deep mud with evident exertion. Mary Kate, light as she was, sank to her ankles in places and splashed the calves of her legs with slime. Meldon, who wore boots and had to be careful where he walked, waited for her on dry ground.

"Well, Mary Kate," he said. "Here you are at last. A nice chase I had after you. Tell me this now, did you see the two strange gentlemen that came off the other boat?"

"I did."

"Did either of them give you a sixpence the same as I did this morning?"

"They did not."

"Didn't they now? I'd hardly call them gentlemen at all then, would you?"

Mary Kate grinned. Her first shyness was disappearing. She began to find Meldon a companionable person.

"Where did they go when they came ashore? Was it up to the iron house of the gentleman that does be measuring out the land?"

Meldon had gathered from the woman whom he had interviewed on his way that this was the proper description of Higginbotham.

Mary Kate understood him at once.

"They did not then."

"Well, and if they didn't go there to where did they go?"

"Back west."

"Do you mean up the hill there to the place where the cliffs are?"

Mary Kate grinned assent. She was a child who set a proper value on words and used as few as possible in conversation. Meldon wondered why the Members of Parliament had gone straight past the human habitations and the works of Higginbotham, which might be supposed to interest them, to the desolate region where only very active sheep grazed. He decided that they must have gone to look at the view, and he thought less of them. The tourist — the mere unmitigated tourist—with no political or social objects before his mind, goes to look at views. No one else—certainly no proper, serious-minded Member of Parliament—would waste his time over a view.

"Mary Kate," he began again after a pause. "You're Michael O'Flaherty Tom's Mary Kate, aren't you?"

"I might then."

"What's the good of saying you might when you know you are? You can't get over me with that sort of talk. Do you see that?"

He held up between his finger and thumb Major Kent's second sixpence.

Mary Kate grinned.

"Well, take a good look at it. Now, tell me this, Is Thomas O'Flaherty Pat your grandfather?"

"Is it me grandda you mean?"

"It is. Is Thomas O'Flaherty Pat your grandda?"

"He might," said Mary Kate.

"Well, go you up to him wherever he is and tell him this: that the gentleman who does be measuring out the land wants to see him to-morrow morning at half-past eight o'clock. Do you understand me now?"

"I do surely."

"Well, what are you to tell him?"

"I am to tell him that the gentleman from the Board who does be measuring out the land wants to take the house off him."

"Well," said Meldon, "you can put it that way if you like. And mind this, Mary Kate — are you listening to me now?—mind this, if your grandda isn't there at half-past eight o'clock the house will be took off him whether he likes it or not. But if he's there, maybe it won't. Do you understand that?"

"I do."

"Well, now, there's one thing more. You're a mighty clever little girl, Mary Kate. I suppose now you can speak the Irish just as well as you can the English. Well, then, you be up at your grandda's house at the same time tomorrow, so as you'll be able to tell him what the gentleman says to him and tell the gentleman what he wants to say."

"Sure, there's no need."

"I know there's no need just as well as you do. But you're to be there all

the same. Will you promise me now that you'll go?"

"I do be in dread of the gentleman," said Mary Kate doubtfully.

"And well you may after plaguing the life out of him all day for barley sugar. Oh, I heard about your goings on. But don't you be afraid. That'll be all right."

"Will he be for beating me?"

"He will not. I made it all right with him, and he won't raise a hand to you, so you needn't be afraid. Just you face up to him and tell him what your grandda says about the house. Now, here's the other sixpence for you. Be a good girl and mind what I said, and maybe you'll get another sixpence yet."

Meldon left the child and strolled down to the pier. He was gratified to see the two strangers in their punt rowing off to the Aureole. Their taste for scenery was evidently satisfied. He paddled out to the Spindrift very well satisfied with himself. He found Major Kent and Higginbotham sitting over the chessboard in the cabin. The Major had just been checkmated for the fourth time and was in a very bad temper. Higginbotham had taken quite the wrong way of soothing him. There is nothing more irritating than to have the mistakes of the past brought up and explained, all their foolishness exposed. Higginbotham, with that curious memory which only chessplayers possess, had insisted on going over each of the four games he had won and showing the Major where the weakness of his moves lay. Meldon interrupted the fourth demonstration.

"Wake up, you two," he cried as he entered the cabin, "and let's get tea. I'm as hungry as if I hadn't touched food to-day. I'll tell you what it is, Higginbotham, I wouldn't like to be an inhabitant of this island of yours when there's a famine on. I never came across such a place in my life for raising an appetite on a man. You ought to get your Board to run it as a health resort for dyspeptic people who can't or won't eat."

"Dyspeptic people," said the Major sullenly, "are the ones who eat too much."

"Oh! well you know the kind of people I mean. I may have got the name wrong. I'm not a boss at scientific names, and I never said I was. I leave that to you and Higginbotham. You like talking about pliocene clay and such things. Hullo! Where are you going?"

The Major had risen from his seat and was making for the galley. He disliked the mention of pliocene clay. It seemed to him that it might lead to inquiries from Higginbotham about the geological survey of the island.

"I'm going to light the stove," he said.

"Oh, I'll do that," said Meldon. "I know you hate messing about with coal and paraffin oil. It dirties your hands. You and Higginbotham spread the cloth and get out the cups and things."

"I'm afraid I can't stay for tea," said Higginbotham. "I've got a lot of writing to do."

"Nonsense," said Meldon hospitably. "You can't really want to write. No posts go out from this island."

"No, they don't. But I'm expecting some members of our Board round before the end of the month, and I like to have a report of my work written up. I didn't realize that it was so late till you came on board."

"Very well, Higginbotham, we won't interfere with your work. The Major and I both know what official work is. We're sorry to lose your company, but, of course, we quite understand. Major, if you put Higginbotham ashore in the punt, I'll light the stove. Good-bye, old fellow. Mind you don't forget to be up at old O'Flaherty's to-morrow at 8.30. It's most important. Are you ready, Major?"

Major Kent was already busy at the stove and refused to leave it. It was Meldon who took Higginbotham to the pier. When he returned the stove was lit, the kettle on it, and Major Kent was waiting for him.

"J. J.," said he, "I'll stand no more of this. If you want to entertain Higginbotham you must do it yourself. You know I'm no good at chess. What do you mean by dumping a man like that down on me for the afternoon?"

"I thought you'd like a game," said Meldon.

"You thought nothing of the sort. You knew I was no match for a fellow who has won championship cups and things. He talked to me about the Sicilian defence. What do I know about the Sicilian defences?"

"If he hadn't had Sicilian defences to talk about he'd have talked about geology, and that would have been a great deal more unpleasant for you."

"I don't see why he need have been kept here to talk at all."

"My dear Major, aren't you a little unreasonable? I had to keep Higginbotham occupied in some way. I had to keep him off the island. Don't you see that if he landed he'd have been almost certain to know up against one or other of those Members of Parliament? Then he'd have let the whole thing out—geological survey, school, and all. You wouldn't have liked that. You told me yourself you wouldn't like it."

"He'll see them to-morrow anyway. It'll be all the same in the end."

"He may not see them to-morrow. They may be gone out of this. You don't realize, Major, what a restless animal the modern Member of Parliament is. He never stops long in one place. He can't, you know. The British Empire has grown so enormously of late that the Members of Parliament simply have to dart round to get a look at it at all. Besides, even if Higginbotham does see them it won't matter. I have everything fixed up for to-morrow. By the evening we'll have our hands on the treasure, and be in a position to laugh at the whole Government. Ah! there's the kettle boiling."

A few minutes later Meldon entered the cabin with the teapot in his hand.

"I was just going to tell you," he said, "when the kettle boiled and interrupted me, that I've made it all right about old Thomas O'Flaherty Pat. He won't track us to-morrow."

"What did you do?" said the Major a little anxiously. "Did you disguise yourself again?"

"I did not then," said Meldon, "but I don't deny that I more or less disguised Mary Kate's grandda, and for the matter of that, Mary Kate herself and Higginbotham. I resorted to what you military men call a stratagem."

"What did you do?"

"Well, maybe as you've been a magistrate since you've given up the army, you'll understand me better if I say that I established an alibi."

"I wish you'd talk sense, not that I care what you did. I'm past caring."

"An alibi," said Meldon, "is what they call it when a man is in another place from where the prosecuting counsel wants him to be. Now I don't want old O'Flaherty down on the pier to-morrow morning when we land. I don't want Higginbotham either. For the matter of that I don't particularly care about seeing Mary Kate there. So I've settled things in such a way that they'll all three of them be somewhere between half-past eight and half-past nine to-morrow morning. That's the alibi. See?"

"I do not."

"Well, I can't help your not seeing. The facts are just the same as if you did. We want to get off to that hole to-morrow without being tracked by old T. O. P., or talked at by Higginbotham. That's so, isn't it? Very well, we'll get off, unseen and unknown. That's what comes of managing these things with some little intelligence."

"What about the Members of Parliament, if they are Members of Parliament?"

"As I think I told you before," said Meldon, "they'll probably be gone to-morrow morning. But even if they're not, it won't matter. They went off this afternoon up to the top of the mountain to look at the view. Now fellows who go wandering about after scenery aren't likely to interfere seriously with us. We needn't bother about them."

CHAPTER IX.

Meldon's stratagem was entirely successful. Not only did Higginbotham and old O'Flaherty keep their engagement punctually, and Mary Kate go to act as interpreter, but almost all the rest of the inhabitants of the island went to listen to the discussion. The pier and the fields through which it was necessary to pass in order to reach the path down the cliff were entirely deserted. Meldon carried a bathing towel slung round his neck. The Major had a basket with some luncheon in it. After landing they took a look at the Aureole. The two strangers were busy on deck.

"What on earth are they doing?" said the Major.

"It looks to me uncommonly like as if

they were trying to pull the halyard clear of the block at the throat," said Meldon. "If they do they may reeve it again themselves. I'm not going over to help them."

"But what can they want to do that for?"

"I'm sure I don't know. Maybe they've got a new one on board. The old one's pretty bad. I shouldn't wonder if they wanted to get rid of it. But anyhow it's no business of ours. Come along."

"I wish very much," said the Major an hour later, when they were scrambling along the rocks below the cliff, "that there was some nearer way to this beastly treasure-hole of yours."

"Well, there isn't; not unless you like to let yourself down off the top of the cliff where the old boy was sitting yesterday, or off the other one on the north side of the bay. I think it dropped more sheer. By the way, that mightn't be a bad idea for getting the treasure up. You could stand on the top and let down a bag to me. I'd fill it with doubloons and then you'd haul up. See? It would be a great deal easier than carrying the stuff all round here and up the path. We'd run it down the hill to the pier in half an hour."

"It would be easier," said the Major. "But it will be time enough to arrange about that when you've got the gold."

They reached the shelf of rock outside the cave at last.

"It's a pity you can't swim," said Meldon. "You look hot enough to enjoy the cold water this minute."

Meldon himself, stripped, stood for a minute on the edge of the rock stretching himself in the warm air. Then he plunged into the water. He lay on his back, rolled over, splashed his feet and hands, dived as a porpoise does. Then, after a farewell to the Major, he struck out along the channel. In a few minutes he felt bottom with his feet and stood upright. He heard the Major shout something, but the echo of the cliffs around him prevented his catching the words. He swam again towards the shore. The Major continued to shout. Meldon stopped swimming, stood waist-deep in the water, and looked round. The Major pointed with his hand to the cliff at the end of the channel. Meldon looked up. A man with a rope round him was rapidly descending. Meldon gazed at him in astonishment. He was not one of the islanders. He was dressed in well-fitting, dark-blue clothes, wore rubber-soled canvas shoes and a neat yachting cap. He reached the beach safely and faced Meldon. For a short time both men stood without speaking. The Major's shouts ceased. Then the stranger said:

"Who the devil are you?'

"I am the Rev. Joseph John Meldon, B.A., T.C.D., Curate of Ballymoy. Who are you and what are you doing here?"

"Damn it!" said the stranger.

"I wish," said Meldon, "that you wouldn't swear. It's bad form."

"Damn it!" said the stranger again with considerable emphasis.

"I've mentioned to you that I'm a parson. You must recognize that it's particularly bad form to swear when you're talking to me. You ought to remember my cloth."

The stranger grinned.

"There's devilish little cloth about you to remember this minute," he said. "I never saw a man with less. But any way, I don't care a tinker's curse for your cloth or your religion either. I'll swear if I like."

"You don't quite catch my point," said Meldon. "I don't mind if you swear yourself blue in the face on ordinary occasions. But if you're a gentleman — and you look as if you wanted to be taken for one — you'll recognize that it's bad form to swear when you're talking to me. Being a parson, I can't swear back at you, and so you get an unfair advantage in any conversation there may be between us—the kind of advantage no gentleman would care to take."

"Well, I'm hanged."

"Think over what I've said. I'm sure you'll come to see that there's something in it. By the way, I seem to recognize the rope you've got around you. If I'm not greatly mistaken, it's the throat halyard of my boat. I know it by the splice I put in where I cut away a bit that was badly worn. It's a remarkably neat splice. Now, if you don't mind my saying so, you're a fool to go swinging over a cliff at the end of that rope. It's rotten."

"Like everything else in your damned—I mean to say your infernal old boat. You may be a parson, but I call you a common swindler if you're the man who hired that boat to my friend Langton."

"Are you a Liberal or a Conservative?" asked Meldon in a cheerful, conversational tone.

"What the devil — I mean, what on earth has that got to do with you?"

"Oh, nothing, of course. Only as you're a Member of Parliament I naturally thought you'd like to talk politics, and it would be easier for me if I knew to start with which side you were on."

"I'm not a Member of Parliament."

"Well, I suppose Mr. Langton is. It's all the same thing. I might have guessed he was something of that sort when I saw him in that fur coat. Is he a Liberal or a Conservative?"

"Are you an escaped lunatic?"

"Don't lose your temper," said Meldon. "If he isn't a Member of Parliament, say so, calmly and quietly. There's nothing, so far as I know, insulting about the suggestion that you and he are Members of Parliament. Lots of fellows are quite keen on getting into Parliament and spend piles of money on it. I think myself that it's rather a futile line of life. But then I'm not naturally fond of listening to other fellow's speeches. It's all a question of taste. Some people like that kind of thing well enough. I don't blame them. There's nothing to be ashamed of in writing M.P. after your name. There's certainly nothing to get angry about in my supposing that you do. But if you like, we'll drop the subject. What did you say your name is. Mine, I think I told you. It's Meldon—Joseph John Meldon, B.A."

"And what are you doing here, Mr. Joseph John Meldon?"

"Bathing. What are you doing?"

"I'm bird's-nesting."

"Ah!" said Meldon. "Now I was very keen on bird's-nesting myself when I was a boy. I remember one time going off to an island in the lake near my old home, swimming, you know, and coming back with four waterhen's eggs in my mouth. One broke on the way and it happened to be a bit—you know what I mean—a bit high. I sometimes think I can taste it still. I couldn't spit it out on account of the other three—" there talking?"

"I'm in no hurry," said Meldon.

"How long do you mean to stand "It's early yet, and it isn't every day I get the chance of talking to a Member of Parliament.

"I've told you once already that I'm not a Member of Parliament."

"Come now, I can understand modesty, and I can understand a man's adopting a disguise. I've done that myself before. But it's a bit too thick when it comes to trying to persuade me that you're not a Member of Parliament. Is there any kind of man except an inquiring English M.P., who'd come off to Inishgowlan in a five-tonner and swing off the face of a cliff on a rotten rope? What would anybody else do it for? Tell me that. Where would be the sense in it? You tell Higginbotham you're not a Member of Parliament if you like, and he'll maybe believe you, though I doubt if even Higginbotham would. Or try it on with Major Kent. He's an innocent sort of man. But there's no good talking that way to me. If you're not a Member of Parliament, what are you?"

"Perhaps you'll believe me and clear out of this if I tell you that my name's Buckley, Sir Giles Buckley, and that I haven't been in this cursed country, or England either, for the last ten years until a week ago."

A sudden light flashed on Meldon's mind. Old Sir Giles Buckley, the grandfather of the man in front of him, had known about the Spanish treasure. He had heard the story, just as Captain Kent had, from Lady Buckley. No doubt he, too, had written it down in some diary, or had left notes of his expedition in search of the treasure. This man — this disreputable, disinherited son of the last Sir Giles—had of necessity been heir to Ballymoy House and the papers it contained. The situation became clear to Meldon. Here was a rival treasure-seeker, a man evidently possessed of information superior to that of Major Kent's grandfather, for he came straight to the very spot which Meldon had taken much pains to discover.

"I'm delighted to meet you" said Meldon. "Your father was always a liberal subscriber to the funds of the church in our parish. I hope you mean to keep up his subscription. The rector has been worried a lot over the loss of

(Continued on Page 65.)

The Bungalow for the Prairie Farm

Where Provision is Made For Housing the Hired Man

By GENEVIEVE

A bungalow like this, painted moss-green, with white trimmings and earth-brown roof, looks almost as though Nature herself had planted it.

For beauty and comfort at moderate cost the bungalow is the ideal farm house, especially where no extra room is required for hired help. The problem of housing men during the rush season is solved here by having a separate cottage, tent, or collapsible house, which serves its purpose very well from seeding to harvest season, and costs less than the house necessary for the year-round, married man. While this house is planned **for a prairie farm** it offers suggestions for making the most of space and having modern conveniences even in a very small farm home.—Editor.

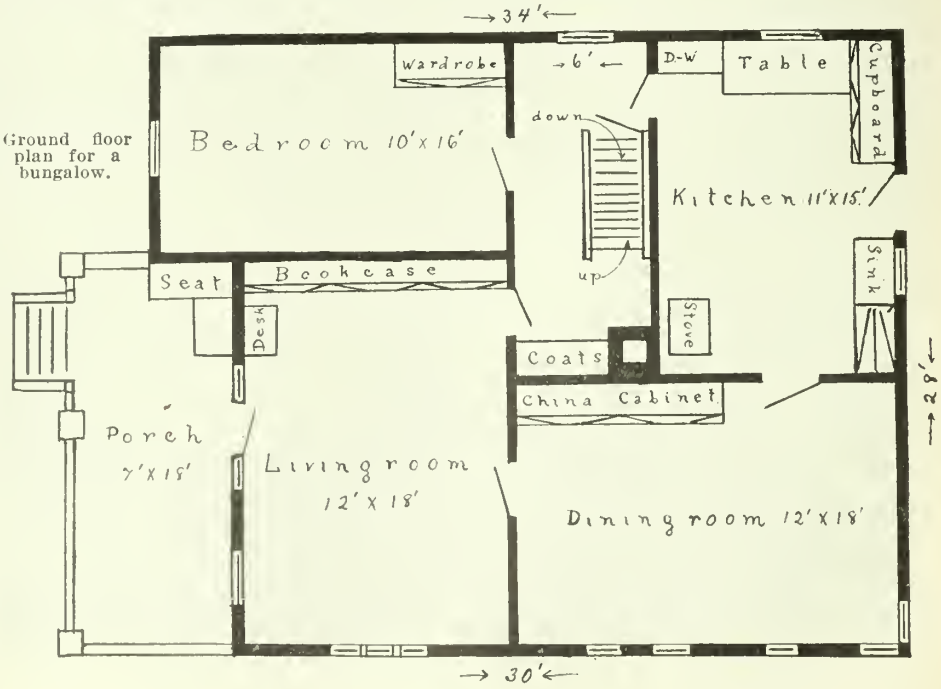
THE bungalow is the ideal farm house for the prairie. Being low and snug and broad, it isn't worried by the weather; it is easily heated; and until your evergreen windbreak or ornamental shrubs make a relief in the landscape it does not stand out so bleak against the sky as the high, narrow house; the picturesque style of architecture that may be put into a bungalow requires no setting of trees and hills, especially where a good scheme of outside decoration is followed. A bungalow like we have here, painted a moss-green with white trimmings and earth-brown roof would look almost as though Nature herself had planted it.

This house is planned for a family alone; there is no room allowed for hired help. The year-round man is not a necessity on the wheat farm, and it is more economical and a great deal more convenient to have a separate cottage on the place to furnish sleeping quarters for all the men required during the rush seasons. The building and furnishing of this cottage need not cost much as it will not be occupied during the winter, and the men will have their meals in the house. No doubt they will spend a good many of their evenings in the house with the family too; the purpose of the separate cottage is not complete isolation.

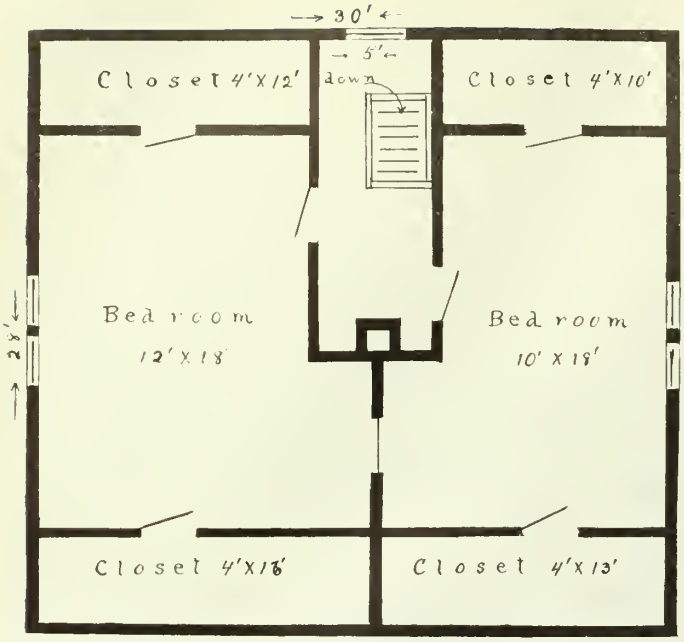
The roof of this building might well be raised a little to give more room upstairs, but even then, considering the space cut off by the slope of the roof, and the fact that there are windows only at the front and back it is advisable to have only two rooms on this floor. A door might be left between. Dormers might be put in either side, an addition which would be most valuable if the plans were to be used in large dimensions, thus allowing for a third bedroom. There should at least be a narrow window under the eaves to light the hall. The closets can well afford to be deep and roomy as they come under the low side of the roof and run the width of the room; it is economy of space to have shelves all along the back where the height does not allow for hanging things up.

As the ground floor of a bungalow must accommodate the living and working rooms of the house, economy of space is one of the first considerations. Built-in furniture helps wonderfully in this besides being less expensive than the "boughten" pieces. It is also more durable and gives your home a substantial appearance. A deep roomy built-in cupboard and a dumb waiter in the kitchen with a long table between, make it quite possible to get along without a pantry. A home-made work table has the advantage of being made to suit the height of the worker, a feature which is too often overlooked in buying furniture and placing cupboards and sinks. It might be thought more convenient to have the sink nearer the stove — in a town house this would be true; but the sink in the farm kitchen is generally doing duty as a wash-stand just before meal-time, and everyone concerned has more room if it is set at some distance from the stove and work table. There should be no cupboard under the sink. A dark sink closet is the most inviting hang-out you can possibly provide for germs, especially if the pipes begin to leak.

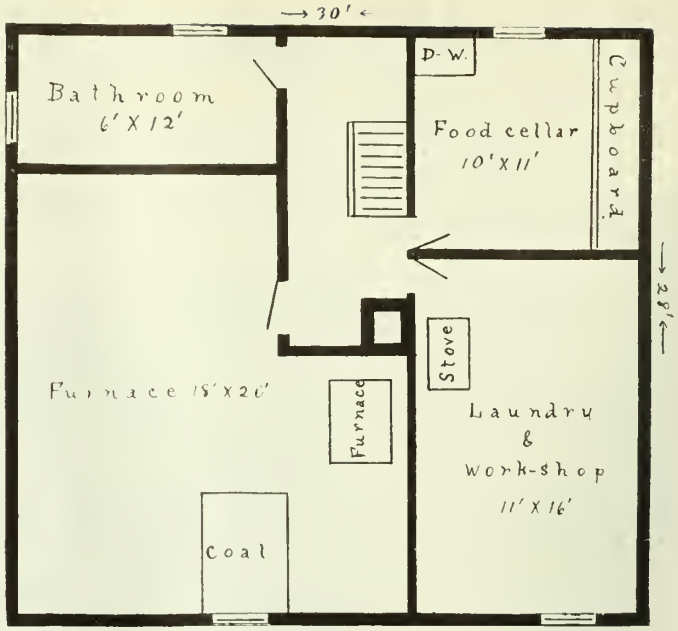
The stairs to the second floor and to the basement open from a hall. This is almost necessary where there is only one stairs in a house and where the bathroom is in the basement. For convenience it is better to have the cellar stairs come up right beside the kitchen door, and near the bedroom, and let the stairs leading to the second floor start opposite the living room, even though this brings the stair landing pretty well under the low part of the roof.



Ground floor plan for a bungalow.



Plan for second floor. The space where the ceiling is lowest is given to deep closets.



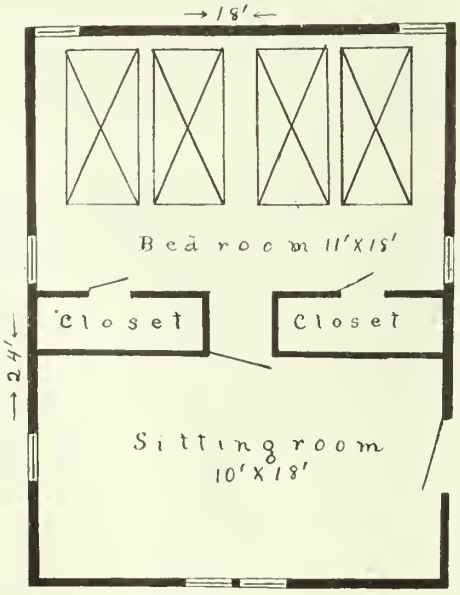
The basement may be made to serve many purposes.

The bed-room is not necessarily intended for a guest-room although it is well adapted for that. There is not room for a closet here, but a built-in wardrobe answers the same purpose very well.

A dining-room should be lighted so as to catch the first and the last glints of sunlight every day. It is surprising how it helps us to begin the day with optimism and end it with contentment, to say nothing of the part it plays in digestion. It is generally impossible, of course, to have both an east and a west window but we can at least have the room lighted from two sides, and if the corner between can be made to point south the result will be excellent. It saves space to have a dining-room long and narrow rather than square so that the length of of the table may be extended without crowding. A width of twelve feet gives ample room for the table and chairs and a built-in china cabinet running along the side of the room. The lower part of this may have drawers for linen and two or more compartments closed by doors without glass for keeping plain dishes, etc. Where the top of the cabinet is made to come just even with the tops of the windows, and the walls up to that height paneled or covered with burlap, with a plate rail running along the top, of the same wood as the cabinet and paneling, the effect is charming.

In the living-room we have more built-in furniture,—a bookcase right across one end of the room, and a desk or secretary. The desk, of course, would not cost a great deal to buy as a separate piece of furniture, but it costs less to build it at home, and the position with the bookcase at the right and the window at the left could scarcely be improved. In planning for built-in furniture, while we know that it is more dignified and durable, that it saves both expense and floor-space we must be very careful to see that it is well placed and to make sure that we will be satisfied with it. It seems to be a woman's characteristic to like to move furniture about, and once this is put in, it is not easily changed. Another important point in making the lay-out for a small house is to allow as much space as possible for the living-room. In a house like this it will no doubt have to accommodate the piano and couch and chairs and reading-table and sewing-machine to say nothing of a possible rocking-horse or two. There might be a closed cupboard under the bookcase for the children's things.

Not the least interesting part of this house is the cellar. A cellar well-lighted and cement-lined may be divided into compartments and serve other purposes than storing coal and vegetables. We have to have separate rooms for the furnace and coal, and the food. Besides we need a work-shop in the building somewhere, and the same room may well be used for a laundry on wash-days. It must be partitioned from the furnace room to keep out coal dust, but just a board partition will do. An old stove with pipe going into the furnace chimney would be necessary for boiling the clothes. The food cellar is under the kitchen, the dumb waiter coming down close to the partition wall. This room is separate from the bath-room by a six-foot hall where the stairs come down. These stairs land close to the doors of the food cellar, laundry and furnace-room, but the door of the bathroom is placed at the far end of the hall.



Plan for a cottage to provide sleeping quarters for four men.

It makes little difference whether the water is heated by the furnace or the kitchen stove, as the problem of pressure is simplified where the bathroom is in the basement. This is not by any means the ideal location but often we could have a bathroom in the cellar when we could not have it anywhere else in the house. This room has two windows and being cemented will be light and dry. The walls should, of course, have a finish of some kind that can be washed. If plastered and given a few coats of light paint or papered with wash paper, they will be easily kept clean. A straw matting that can be scrubbed is better than linoleum for a cement floor.

While a house built after this plan is neither large nor luxurious it should be both comfortable and convenient. Having a separate cottage for the hired men will also take a great deal of work out of the house. There are tents manufactured especially for this purpose, but even if the farmer built a cottage it need only be a very simple affair, and as the men get their meals in the house, little furniture will be required other than beds and chairs, a table and a stove. A plan something like the one shown here would do very well for three or four men. Of course it is not intended at all for a married man's cottage.

Capitalizing a Muck Soil

Six Acres of Cedar Swamp, Regenerated With Drains, Manures and Good Soil Management Yields a Big Fortune

By TOM E. DOBBIN

These little stories of big farmers are intensely interesting. We have here an account of the developing of an area of swamp, clay, and quick-sand into one of the richest, best-drained, most profitable farms in Canada. The story tells how it was done. Foresight in buying land, the use of up-to-date scientific methods of drainage and fertilization, and a business knowledge of marketing, are things in which Canadian farmers are every day becoming more interested; and one of the kindest teachers in the world is another man's experience.—Editor.

THERE is an abundance of literature nowadays that demonstrates to a certainty that market gardening is one of the surest avenues to financial success. This literature is generally replete with figures that show how easy a thing it is for one with comparatively little capital and experience with markets and soil and plants to buy a few acres of land near some good market, to plant a few seeds therein, hire a little help that is standing by waiting for a job, to visit a neighboring city and secure customers who have been eagerly anticipating the advent of some gardener with fine enterprise and good business ability, to sell to these at a large profit, and from that time on to live on the fat of the land. If a little romance can be thrown in, so much the better.

The hard facts are, however, that the great majority of those who tackle the market gardening proposition do not grow rich by so doing. It is equally true that anyone who undertakes this work without experience at it is almost certainly foredoomed to failure. All over the country may be found abandoned market-gardening plants that are simply monuments to human folly.

All the greater is the surprise when one finds a man who has made good where so many have at best attained but mediocre success, and where the majority have barely made a living. To the eminently successful class belongs William Smith of Waterdown, Ontario.

Mr. Smith's garden consists of about six acres, and it is doubtful if any six acres devoted to this work exceed the returns that these acres have yielded for the last twenty-five years.

When one seeks the secrets of this gardener's success one is attracted by the fine judgment that enabled the buying of this particular portion of land. For one thing, it is so situated that it is usually about four degrees warmer than the land adjacent to it. Particularly is this the case when the wind is from the north or west. Unless one is aware of this he does not appreciate the advantage this garden has in the matter of "lay" and location. The land lies to the sun in such a way that it gets the benefit of the sun in the early spring and in the early morning. These are points that the gardener who knows his business does not overlook.

In the next place, the land is particularly well adapted, as a whole, for the work in hand. About two acres of the land consists of a clay loam that has been carefully made up. As it originally lay near a cedar swamp, this clay has in it a plentiful mixture of swamp soil that adds much to its suitability for gardening. The clay is there and it required a deal of "making" to get into its present state of fertility.

Formerly a Cedar Swamp

The remainder of the land consists of the rich deep soil that is the joy of the man who loves gardening. Thirty years ago it was a cedar swamp and the wise ones declared Smith to be crazy when he bought it. It was boggy and a tangled mass of roots. However, this gardener did not have British pluck in him for nothing. At the job he went and at it he toiled as few tillers of the soil have toiled till the land was cleared of surface rubbish. Then followed the even more arduous work of draining. As the sub-soil of some of the garden was quicksand he was obliged to use planks and scantlings for his draining material. He made his main drain large enough to carry off all the water that he deemed could ever menace his operations. This drain he had to empty into a pond that was to act as a reservoir for watering his garden during the drought of summer In connection with this pond there is a steam engine and a windmill, both of which are available for pumping purposes. From these a network of iron piping may be laid whenever required for watering purposes.

Where the subsoil admits it, tiles are used for draining. The aim has been to have sufficient drains to carry off the surplus water before it has had time to sour the land in any way. These drains are watched carefully all the season through, for unless they are working, loss is sure to follow.

The theory in regard to fertilizing followed on this garden is that you must, to succeed, have the right soil and the right locality to begin with and then to use an abundance of barnyard manure. By an abundance is meant all that the land will hold. The manure should be applied in the spring and fall, though it is regarded as good policy to secure manure whenever it is available and to apply it directly to the land. There is no fear felt of the land's becoming too rich. To this fertilizing is added wood ashes. The most thorough cultivation imaginable is practised.

Celery Follows Potatoes

The system followed in this garden is to plant the whole in early potatoes, with the exception of what is planted to tomatoes. When the potatoes are marketed, the land is in fine condition for the celery crop that is to follow, together with the summer savory and onions and melons and other highly profitable garden stuff. For a number of years the variety of potato planted was the Early Ohio. Of late years this variety has not yielded abundantly and the Eurekas have taken their place. The potato seed is set aside early in the spring for sprouting. The aim is to have the potatoes in the ground about the first of May.

William Smith in his garden. Thirty years ago this garden was cedar swamp.

though the date of planting depends a good deal upon the season. No hurry is made to get the potatoes planted before the season of growth starts, and the danger of frost is well passed. Experience has shown that there is no advantage in having potates up early only to have them nipped by the frost. Nor is there any gain in having the potatoes on the market too early, when too early means that the tubers have not attained a good growth. In this garden the aim is to have the potato crop pay for all the expenses of the season, leaving all the rest of the product clear profit. It is in doing this that Smith has won out so abundantly.

Mr. Smith has gone on the theory that anything that is worth doing in gardening must be done in the best style possible if the maximum of results is to be obtained. Accordingly he has gone the limit in raising and caring for his plants. He has a splendid greenhouse in which he starts his celery and his tomato and cauliflower plants. This house is heated by an up-to-date heating plant and provided with the best of soil.

He raises two varieties of celery, the early and the late. The seed of the early varieties is sown in the greenhouse about the tenth of March, and the late varieties are sown about the first of May. These seeds are watched with the greatest care and every precaution is taken to keep the growth continuous and vigorous. The transplanting is done with care in order that the plants may not be checked in their development. For this purpose frames are furnished outside into which the plants are placed till such times as the potato crop is ready for the market. As the potatoes are dug the celery is planted till all the celery both early and late is in the ground. From the time that the seed is sown till the plants are marketed, there is every necessity for continuous watching, and the application of experience won by actual contact with the plants. Even when all that is known is done and applied there is almost sure to be something turning up that will give cause for uncertainty. He believes that there are conditions in the season that cannot be counteracted by spraying, and that it is the season that causes the blight. He is willing to learn of anyone that will show him how blight may best be fought. He has tried most of the ways recommended by experts, but he is not yet dead sure that any one of them is to be depended upon.

The early celery is marketed as far as possible in the early part of the season. The winter celery is cared for in five frost-proof celery houses. The placing of the celery in winter quarters is an art by itself. The conditions that experience teaches, as regards heat and warmth and moisture, must be observed or trouble is sure to follow. Conditions approaching cold storage are aimed at, yet actual frost is shunned with all vigilance possible. Then "heating" must be avoided with equal care. Perhaps in no department of market gardening is eternal vigilance more essential than in the growth and care of celery. Even when every precaution is taken that care and experience can suggest, disappointments must be looked for and borne with philosophical equanimity.

Convenient Building Erected

In connection with the celery storehouse there is a washing and preparation room. This is provided with a well of spring water. It is floored throughout and fitted up to meet all requirements. The preparation of the celery for market involves a deal of care and labor. The washing and rinsing and trimming and sorting takes time and patience, to say nothing of the likelihood of being thoroughly soaked with cold water. When the sorting is done the celery is put up in bundles of a dozen each, the smaller heads being placed in bundles by themselves. Some idea of the extent of Mr. Smith's celery operations may be judged from the fact that he annually plants about twenty-five thousand early celery, and about sixty thousand of the late variety. If one is disposed to figure he may reckon up the profits in the business by estimating the sale at forty cents per dozen. It must be remembered that the profits depend upon the season. If the season be a good one the celery is large and large heads are the order, and the highest price can be commanded. When the season is unpropitious the celery is smaller and lower prices must be taken. The average price, however, is about forty cents per dozen.

Tomatoes Blossom Early

In addition to the potatoes and celery this garden produces about two thousand tomato plants. The Earliana is the variety that has been found to be the best suited for this garden. The object aimed at is to have the plants large and stocky and coming into blossom about the twenty-fourth of May and ready for planting in the field. The seed is sown in the hot-house and then transplanted. The cauliflowers, about seven thousand of them, are prepared for field planting as soon as room is made for them by the digging of the potatoes. Again the yield depends upon the season, and the profits are largely dependent upon the yield. The potatoes vary in price from a dollar per basket to fifty cents per basket, wholesale price. Mr. Smith has sold cauliflowers from a dollar-seventy-five for seven down to a few cents a dozen.

Let no one make any mistake about it, market gardening means hard work and constant attention. When the risks are considered and the constant attention that must be paid to the plants and to the market it is not to be wondered at that so many are unfitted for it and lose all they have by venturing into it. While this garden some years yields a gross receipt of nearly six thousand dollars the big money is secured at the risk of heavy loss, and it is never taken in without a deal of labor and hard thinking.

Another secret of Mr. Smith's success has been his family of two sons and a wife that is his equal in a practical sense and capacity for getting things done. This has been his solution of the labor problem. Perhaps nowhere can one in rural life find a better exemplification of the value of family co-operation and the importance of profit-sharing than can be found in this instance, The rule is "share and share alike." The result has been prosperity and enthusiasm in business.

Success has been won here at the price of work and high intelligence. Nature has yielded the profits. No man has been exploited. If there is anything that Mr. Smith and his family are more famous for than for their success in gardening, it is for their high sense of honor. Everything must be on the square or they will know the reason why. They have made money, but it is clean, every copper of it, and of this fact they are justly proud.

A Landmark In The West

Another historical spot in Western Canada has recently been located and marked. It is in the Province of Saskatchewan, and in the constituency of Pelly, situated about three miles north of the town of Pelly, on the Canadian Nothern line. The location is on the site of the old headquarters of the Royal North-West Mounted Police, known as Fort Livingstone, or Swan River Barracks, and in the 'seventies was an important point in the West. It was here that the first session of the first North-West Council was held, commencing on March 8, 1877, presided over by the Hon. David Laird, who was Lieut.-Governor of the North-West Territories at that time. The members of that notable Council were: Colonel James F. Macleod, Commissioner of Mounted Police; Hugh Richardson, Stipendiary Magistrate; Mathew Ryan, Stipendiary Magistrate. At the time there were no settlers, and the surveys were only being commenced in the Far West. In 1878 the headquarters of the post were moved about 150 miles south, where the men put up new log-buildings. In 1884 the country around Swan River was swept with prairie fires, to which the old barracks fell a prey. During the past summer Mr. J. W. Scott, an ex-member of "D" troop, stationed at Swan River during the meeting of the Council, visited the old site in company with Mr. Dundas, of Pelly, and located the spot on which the Governor's house stood and in which the session was held. To commemorate this event and the place, Mr. McKenzie, of Pelly, has had a tablet erected on the spot.

A Garden of Roses

Every Farm Home Should Have a Few Hardy Varieties of Bush and Climbers

By W. HUNT, F.R.H.S.

IN recommending roses for the farm flower garden, one has to bear in mind the suitability of the varieties recommended as being specially adapted for the busy surroundings of a farm home. It is pretty generally known among flower lovers that roses as a rule require more attention and care than do most plants. At the same time, there are no difficulties in growing roses that cannot be overcome with a moderate outlay of time, labor, and expense, if these last named are properly applied.

There is no reason why every farm home should not have a few of the many beautiful and easily obtained varieties of roses of both the bush and climbing type, to brighten the farm flower garden. The most unpretentious farm house or buildings can be transformed into a bower of beauty by a few well selected plants and climbers.

Climbing Rose "Dorothy Perkins." Grown in a Guelph Garden.

The rambler climbing over the front door, and the pink rose bush under the parlor window are, unfortunately, passing from our farm homes. We have here a fund of practical information on the subject of growing hardy varieties whose showy beauty will repay many times over the labor spent in their care and cultivation. The article will be of interest to every member of the farmer's family.—Editor.

Types and Varieties

There are four classes or types of roses that are particularly well suited for the farm garden. These are the Climbing Polyantha or Rambler type of rose, the Rugosa or Japanese Rose, the Hybrid Perpetual (H.P.) and the Rosa Muscosa or Moss Rose.

Climbing Roses

The four easiest grown and hardiest varieties that give the best flowering results, are the Crimson Rambler, a variety bearing huge clusters of crimson-red double roses; the Dorothy Perkins, a dainty, soft shell pink double rose, borne in great profusion; Lady Gay, a strong growing variety of a pale pink shade, having deep green foliage, and the Tausendchon, a very free flowering, large, pale pink rose, that unfortunately seems to bleach to almost a faded white in very hot weather, a fact that detracts somewhat from its appearance, especially when planted in a very sunny position. Planted where shaded from very hot sun, it is more effective. Hiawatha and American Pillar are two single flowering climbers that are very pretty and easily grown kinds to add to the above list. These single roses have a natural beauty that appeals strongly to all true rose lovers.

Planting Climbing Roses

The mistake is often made of planting climbing roses close up to a building or close board fence, facing directly south. This is not a good position for a climbing rose, as the concentrated heat of the sun in very hot weather not only bleaches the flowers and shortens the period of flowering, but severe attacks of insect pests are also induced that often destroy the foliage of the rose, and in many cases do serious permanent injury to the bush itself. Planting them near to a building facing east or west, or even the north if not overshadowed too much with the building, is not so objectionable. An open picket or wire fence, or a wire trellis several inches at least from a building, will be suitable for climbing roses. It is absolutely necessary to have at least several inches of clear space—more if possible—behind the growth, so that a free circulation of air may be obtained, and the foliage thoroughly sprayed with clear water or insecticides as required. A wire trellis is easily fixed up. A few cedar posts or pieces of light scantling with strong galvanized wire stretched ten or twelve inches apart on them, or a piece of wide-meshed chicken wire, or thin slats of wood may be used. Wood, unless planed and painted is not so desirable as wire, as it harbors insect pests. Climbing roses should have about seven or eight square feet of trellising for a good specimen plant.

Rugosa or Japanese Roses

The original type of these roses are probably the hardiest, and the most rugged and enduring of all cultivated roses. They are bush roses, varying from two to four feet in height, and specially suited for planting as single specimens in the garden, or at the edge of the lawn among shrubs or for a rose hedge, but should not be planted in a bed among other rose bushes such as Hybrid Perpetuals, as they are more vigorous growing than most other bush roses. This last-named characteristic makes them specially suited for the farm garden. They are almost immune from the attacks of insect pests, another strong point in their favor. They also flower more or less continuously from June until the sharp frosts of early autumn. I have picked quite nice bouquets from several varieties as late as the middle of October. The blossoms, however, have not the beautiful form or the rich fragrance of most of the Hybrid Perpetual roses. The following is a list of some of the best varieties of the Rugosa and Hybrid Rugosa roses, placed in order of merit as suited for a farm garden. Almost all of the varieties are more or less fragrant.

Blanc double d'Coubert. Pure white double.

Conrad F. Meyer. Double, silvery rose.

Sir Thomas Lipton. Double. White.

Rosa Rugosa Rubra. Crimson. Single.

Rosa Rugosa Alba. White. Single.

Hybrid Perpetuals

(H.P.) These are the hardy, showy varieties that produce the large, double, and usually sweetly perfumed roses that so delight the true rose lover. Among the numerous really good varieties, the following twelve will be found as suit-

able for the farm garden as any, not only in point of hardiness, but also in the quality of their flowers in most instances. planted in a bed or in most instances. These roses are best planted in a bed or in rows so that the plants are set about 3 feet apart each way.

Alfred Colomb. Bright dark red.
Anna de Diesbach. Silvery pink.
Captain Hayward. Carmine crimson.
Clio. White, shaded pale pink.
Fisher Holmes. Rich crimson.
Frau Karl Druschki. Pure white.
General Jacqueminot. Scarlet crimson.
Mme. Gabriel Luizet. Silvery rose pink.
Mrs. John Laing. Bright pink.
Prince Camille de Rohan. Dark crimson.
Ulrich Brunner. Cherry red.
Mme. Plantier. White. Hardy, free flowering and very suitable also for planting in a cemetery plot.

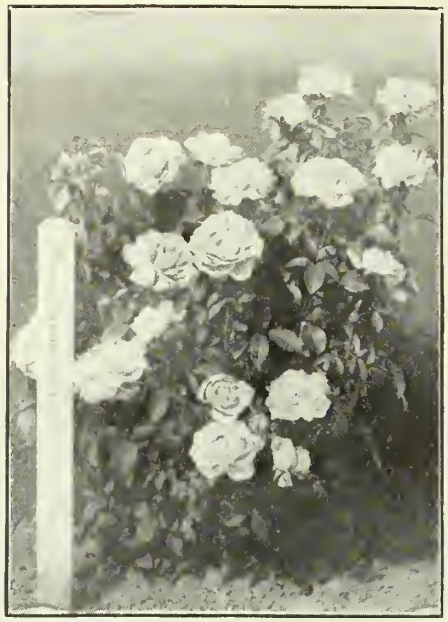
Moss Rose

These are bush roses, and of very similar habit of growth to the Hybrid Perpetuals, only that most of them are of more vigorous and hardier growth than the H.P. roses, and not so liable to attacks of insect pests. The following are four of the best varieties. Crested Moss, pink; Blanche Moreau, white; Gloire de Mosses, red; Princess Adelaide, silvery pink.

None of the Hybrid Tea roses or the more tender H.P. roses have been selected in the above lists, as I consider they are not suited for the farm flower garden on account of their tenderness, and the extra care and culture they require to make them a success. There are, however, a few kinds of roses that are suitable, that do not belong to the before-mentioned classes. Two of the best of these for planting at the edge of the lawn, or at the side of garden, are the Austrian Yellow roses, Harrisonii and Persian Yellow. Another is the old Provence or Cabbage Rose, one of the most deliciously perfumed of all roses. To these might be added the Hybrid Bourbon rose "Hermosa," the last named bearing a profusion of its silvery-pink double flowers from early in July until quite late autumn. This last-named variety requires a little protection in winter in the colder parts of the country.

In the Niagara peninsula, there are plants that have been growing and flowering continuously without winter protection for twenty-five years. I remember picking quite a nice bouquet of buds and blossoms from a plant of Hermosa growing in a warm, sheltered spot, in my garden in Hamilton on Christmas Eve in 1884 or 1885, when exceptionally fine weather prevailed until Christmas and later.

One more good rose is the Gruss an Teplitz, a hybrid tea rose that will often give an abundance of its rich



A hedge of roses can make even a wire fence a thing of beauty.

crimson blossoms all through the summer with only ordinary care and attention. The "Maiden's Blush" Rose is also one of the grand old hybrid "take care of itself" roses, its double flesh-pink, sweetly scented flowers being borne very freely, the bush requiring very little care and attention. This old rose is unfortunately not catalogued, as it should be, in our Canadian Rose and Plant catalogues. It is one of the roses that does splendidly on its own roots, without being budded or grafted. It is found listed in almost all English Rose catalogues. A bush of the wild Sweet Briar is also a good addition to a collection of roses.

Soil and Planting

All of the roses recommended will succeed well in any fairly good garden soil if the drainage is good. Sandy and gravelly soils are not good for roses. These should have soil of a heavier nature dug and mixed in for roses. A clay loam or even a rather heavy clay will suit roses very well. It should be dug deeply and enriched with a good coating of barnyard manure, well rotted. Bone meal or crushed bones is also a good fertilizer for roses. To grow good roses, the soil must be rich in fertilizers.

An open, sunny, airy position suits roses best. The only time that rose bushes require shade is when they are in bloom, and then only for a few hours in the hottest part of the day. One of the most successful amateur rose exhibitors that I have met, used to shade his roses when in bloom, by stretching a piece of cotton sheeting over them for a few hours at mid-day, thus preventing bleaching and wilting. In planting rose bushes, pack fine soil firmly around the roots. Do not put manure or fertilizer in direct contact with the roots. A little fine sand sprinkled around the roots will assist root development. The fertilizer should be dug in a short distance away from the roots or be used as a mulch on top of the ground after planting. Packing the soil firmly around the roots is very necessary in planting rose bushes. Early in spring, about the end of March or early in April before growth buds start much, is the best time for planting. Plant them a little deeper than they were planted in the nursery. Imported rose bushes often have very long, large roots on them. These may be shortened to about twelve inches in length before planting. Cut off all damaged roots, leaving all the small fibery roots possible. The young top growth of budded bush roses is often two or three feet in length when purchased. This growth should be cut back fully one-half after planting. Too much old top growth left on newly planted roses is not advisable. The young canes of climbing roses to be planted usually require cutting back about one-half their length at planting time. In very dry weather, the plants may require watering at the roots once a week or so the first summer until well started.

Pruning

The best time to prune roses is in spring about the middle or end of April, just as the growth buds are starting to show signs of life. The Rugosa and Austrian roses do not require much pruning if any, except to keep the bushes shapely and within bounds a little, by thinning out here and there perhaps a limb that has grown out of place somewhat, and to cut out any dead wood.

Climbing Roses

First cut out any dead growth, then cut out any small weak shoots close down to the ground. Thin out the canes that are left, leaving strong canes about twelve inches apart from each other when tide up on the trellis. It is best to tie up three or four strong young canes of the last season's growth on each bush and cut away the very old canes or branches when thinning the bush out, as after the third year the large canes do not produce as fine roses as the younger canes. The side shoots on the old canes should then be cut back as shown in the photo, leaving only about one-third of the base of the

"Blanc Double de Coubert."
New Double White Rugosa Rose, Suitable for a Hedge of Roses.

(Continued on page 44.)

A Farm Review of Reviews

Some Interesting Sketches from Farm Journals Condensed for Busy Farm Readers

BREEDING PHEASANTS

A Lady Breeder Tells of How She Makes Money From This Side Line

ABOUT eight years ago, Miss Blagden, a professional poultry-woman of Massachusetts, started in to see what a woman could do with a small poultry farm, and has gradually built up so large a business that she ships eggs for hatching all over the country, says Country Life in America. Her plant is not a show place in any sense, for capital has not been abundant. The houses were built with her own hands—colony houses for the most part, boarded with box boards from the grocery store and lined inside with burlap. Outside, the houses are covered all over with good felt roofing and they have open fronts, with muslin curtains for use in very cold or stormy weather. Each house is intended to accommodate eight hens and a cock. The houses were all built for Houdans, but several of them have been adapted to pheasant rearing.

All the pheasant yards have been wired over, so that the birds will not take wing and soar away.

Miss Blagden began keeping pheasants partly as an experiment and partly because she liked to see them around. They have proved an excellent investment, for she sells all the stock she can raise, and is obliged to turn down orders for eggs. Profits are greatest, she says, when she sells pairs a year old, so that she sells only what eggs are left after she has obtained as many as she can well handle.

Cochin and Japanese Bantams are used for hatching the eggs, and the time required is from twenty-five to twenty-eight days. "Coddle them for the first six weeks," advises Miss Blagden, from her experience; and adds, "After that they seem iron-clad."

"What troubles the youngsters most?" was the question put next.

"Lice," came the prompt reply. "It is lice that kill them off so fast."

Miss Blagden solves the louse problem by dusting the sitting hen every other day until the poults appear. By that time there are few lice left to transfer their feeding ground to the newly-hatched youngsters.

An odd method is used to trap the red mites. A large square of white sheeting is put into the bottom of the box containing the hen and her brood. Then another square of the cloth is thrown over the box and left for a short time. When it is removed, it's likely to be found fairly red with the mites which have collected upon it. Immediately it is dipped into boiling water, after which it is dried and used again.

Young pheasants are on the move from the instant they pop out of their shells, and for that reason, Miss Blagden likes to have the hen in the bottom of a box with fairly high sides, or with a few feet of the finest mesh chicken wire around the nest.

Miss Blagden's feeding methods are not complicated, even though a bit unusual. She starts the poults with the traditional hard-boiled egg. After that she hunts worms for them. Some people systematically breed maggots for their young pheasants, but by keeping a few old boards and some stones in damp places, Miss Blagden is able to find a sufficient supply of live meat with but little effort. As a matter of fact, it is just as satisfactory to give the young pheasants a little hamburg steak three times a week. After the youngsters are well started in life, ordinary small grains are given.

Miss Blagden likes to raise the poults on new land, for tainted ground is even worse for them than for chickens. In fact, it is useless to try raising them on such ground. When they are nine or ten weeks old they are ready to begin roosting in trees or any other convenient place.

Although the Ring Neck is probably the best known pheasant and by all odds the best to breed for game purposes, Miss Blagden finds it always wild and less desirable for aviaries than the Golden and Silver varieties. The Golden pheasant may really be considered domesticated. It gets fairly tame and is probably the best pheasant for the amateur. Certainly it is strikingly beautiful. The Silvers are in great demand, though, and are very showy. In the breeding season the males are surprisingly vicious, however, and two males will fight like game cocks. They will even attack their owners. "Why," exclaimed Miss Blagden, "I have had fairly to fight for an egg on the floor of the pen and have had the cock draw blood from my hand." Silver pheasants have a cry which is rather unpleasant, especially in the early morning hours.

Miss Blagden mates her Silvers in pairs and her Golden pheasants in trios, while in the Ring Neck pens four hens are mated to a cock. The Ring Necks lay the second year, but the others not until the third year. From forty to sixty eggs are laid, the season extending from March until the first of September. The eggs are small and are laid either on the floor of the house or in the pens. Nests are ignored and the eggs are often laid in the evening, even after the birds have gone to roost, making it necessary to keep a litter on the floor in order to obviate broken eggs.

Late spring is considered by Miss Blagden the ideal time for hatching the young pheasants, after the cold weather is over but before the heat of summer has come. There is no advantage whatever in getting them out before the middle of May or the first of June.

Miss Blagden has found no difficulty in disposing of both stock and eggs. Owners of country estates see the birds when motoring past and are attracted by their beauty.

SOD-MULCHED ORCHARDS

A Sensible Examination of the Claims of the Geneva Experimental Station

CANADIAN farmers and fruit-growers have learned much from time to time about the Geneva experiments in apple-growing, where the orchards in sod had done better than those under cultivation. At the meeting of the New York Fruit-growers, Prof. Hedrick sums up the reasons why these particular trees did best under this treatment. Grant Hitchings, of New York State, was the pioneer in this method.

What is the Hitchings method? asked Prof. Hedrick. The term has become the sound-symbol for a mixture of more or less vague practices connected with sod in orchards; sod pastured with sheep, hogs or cows; sod of blue grass, orchard grass, clover, alfalfa or weeds; sod from which the grass is cut for hay, or cut and piled about the trees, or going uncut; sod supplemented by straw, manure or other by-products; sod the growth of years and sod turned under more or less frequently. This confusion has spread obscurity over much that has been said about the method. The description of his treatment, now to be described, must be kept in mind.

In the Hitchings method the ground is laid down to sod before or as soon as

the trees are set, and the grass is cut for a mulch once or twice per season as conditions may demand. The orchard remains in sod indefinitely, since plowing is supposed to be detrimental to the conservation of the mulch which is the essential of the treatment. The cut grass is not removed from the land and until roots and branches utilize the space between plants, it is raked and piled about the trees.

Orchard an Old Pasture

Prof. Hedrick states that before starting the commercial orchard Mr. Hitchings had been a dairyman, and we understand that the most successful part of this orchard was formerly a pasture. The farm is on highly rolling bottom land on the hills of a deep valley. The land in the orchard is too steep for definite cultivation, and under constant tillage more or less washing would occur. Moist and springy land may be looked for at the foot of high elevations. This occurs in the Hitchings orchard. The soil at all seasons contains much water, although open ditches have been dug to carry this water away. This seepage down the hillside is one of the dangers which bring success in the peculiar sod mulch culture of this orchard.

In a general way it may be stated that four varieties of apples, 10 years set at the beginning of the experiment, and 20 years at the end, bore an average of a little less than four bushels per tree under sod, while those in tillage gave a little more than three bushels per tree. The difference in favor of sod was four-fifths of a bushel per tree. The percentage of poor fruit was much higher in the tillage section than in the sod. This was largely due to the fact that much of the fruit was harvested by permitting it to drop to the ground, and, of course, under this plan the sod provided a softer and cleaner place for falling. As to the size of the apples, year in and year out there was very little difference in the two sections. Of course, the apples from the sodded plots were more highly colored.

Practical Lessons

Here are Hedrick's conclusions:

1. Orchards on steep hillsides where land would wash badly under tillage may be kept in sod.

2. On land covered with rocks, trees may best stand in sod. Such lands, whether steep or not, must often be kept in sod because of the impossibility of tillage.

3. The Hitchings method is adapted only to soils having suitable depth. That is, soils in which which grass roots and tree roots do not come into too intimate contact or too direct competition for food and moisture. The commercial apple orchards of New York are at present largely on lands the top soil of which averages less than a foot in depth. On these shallow soils the Hitchings method usually will prove a failure.

4. Soils must be retentive of moisture. To sustain trees at their best under the Hitchings method, soils must not only be deep but must be very retentive of moisture, or have the water table comparatively close to the root run of the trees, or, as in the case of the orchard under discussion, must be fed by seepage from higher ground nearby. On land that annually suffers from summer droughts the sod mulch treatment will almost certainly prove less beneficial to trees than tillage.

5. Economic conditions may decide the choice between tillage and some mulching treatment. The cost of caring for an orchard is very much less under the Hitchings mode of mulching than by tillage. If, then, a man chooses to grow apples extensively rather than intensively, he may make larger acreage in sod counterbalance greater production under tillage.

The Hitchings orchard, then, is a splendid demonstration that new paths to success may be blazed, new practices devised to meet new conditions or old obstacles overcome in new ways. It is an encouraging example of resourceful pioneering and of persistent endeavor to attain the high success. The pith and the point of the work by the Geneva Experiment Station in this orchard is not so much the new method of growing apples, as that fruit growing is intensely individual. The prime factor is the man.

GROWING EARLY TOMATOES

A New Jersey Trucker Tells of How He Gets His Products Ready

TOMATO-GROWING is each year receiving more and more attention by South Jersey truckers, says a writer in the Rural New Yorker. Practically every trucker grows this vegetable as one of the main money crops, few having less than 50 sash (enough for 8,000 to 10,000 plants) while many use 200 or more in producing plants for their own setting. An idea of the enormous output of tomatoes from this section can be gathered from the size of the shipments from the main shipping point at Swedesboro. From there daily shipments to distant points of 20,000 to 30,000 crates are not at all exceptional during the height of the season, while nearby markets are supplied in proportion.

The variety grown is Earliana. This is used exclusively. Growers select and save their own seed in order to avoid loss from seed untrue to name and also to improve their own particular strain of that variety. The work of the season commences the last of January or the first of February when the soil is put in the hothouses in preparation for sowing the seed. These hothouses are cheap and simply constructed greenhouses built to utilize the ordinary hotbed sash, and heated by one or two large wood stoves with the stove-pipe running beneath the raised benches to give some bottom heat. The houses are 15 to 18 feet wide and long enough to furnish the necessary space for starting the seedlings. One thousand fine plants can be grown to the sash without crowding. About two inches of fine well-rotted horse manure is placed in benches, then covered with an equal amount of rich sandy loam. A fire is started and the house and soil thoroughly warmed before seeds are sown.

The date of sowing seeds varies with the season and the preference of growers, but February 15 to 20 is about an average. The seed is sown thinly in wide furrows about four inches apart, and covered lightly. After sowing more heat is given in order to germinate the seed quickly but after seedlings come up a more moderate heat is maintained with no attempt to force growth. Plants are allowed to remain in the seed bed until March 20 or 25, when if weather permits and plants are large enough to crowd, they are transplanted to cold frames.

Few truckers grow less than 8,000 to 10,000 plants, while many have 25,000 to 30,000; therefore paper pots, flats, etc., are out of the question and even if practical would not be used, because the methods practised give not only cheaper plants, but also better-grown plants, with less labor and more perfect control of moisture supply. Some of the cold frames are made double, most of them are similar to those used everywhere by gardeners, with slope to the south. The north side is boarded up to a height of 18 inches, and the south side is simply a 12-inch board stood on edge. Both sides are braced by posts set in the ground at distances of six to eight feet. The frames are made any desirable length, with the ends boarded up. The sash used here are 3x7 feet, so the frames are made 6½ feet in width, which is wider than for those covered with the standard 3x6 sash.

Making the Cold Frames

Rafters are used between the sash, so they can be pulled down from the top for ventilation, or if need be pulled off altogether. Rafters are useful in saving labor, for by using them it is possible for one man unaided to give the necessary attention to beds, thus permitting the time of a second man or helper to be spent in other work at a season when help is hard to get and wages high. They also prevent sash from sagging in the middle. Neither sash nor rafters, however, are placed on the frames until beds have been made to receive the tomato plants. In making the beds three inches of finely turned stable manure or stable and hog manure mixed is spread evenly over the bottom of the frame. A 3x3 inch piece of frame stuff six feet four inches long is a good aid in getting the manure on evenly. Commencing at one end of the frame measure off two feet and lay the three-inch gauge across the bed; fill this space with manure, using care to keep it level, and putting no more than will come to the top of the gauge. Then move the gauge two feet farther along and repeat. After repeating a few times the gauge can be moved for greater distances and finally, as one becomes accustomed to

the work, will hardly be required at all. After the manure is in, the bed is ready for the soil. Growers use as good rich sandy loam as they can secure and place an even layer two inches deep immediately above the manure, using a gauge as for the manure. This completes the making of the cold-frame bed; sash and rafters are put on and everything is in readiness for the plants which are put in on the first nice day after March 20 or 25.

Setting the Plants

When pulling plants from the hothouse they are first loosened at the roots by running a trowel below and lifting both soil and plants. Then by taking plants from the loosened soil, the whole root system is left intact and there is less wilting than if the plants were pulled. Two to four hundred are pulled at a time and taken immediately to the cold frame, where, where everything should be ready to receive them. Transplanting is done by the aid of a "spotting board" operated by two men. The spotting board is simply a board one foot wide; long enough to reach across the bed, about six feet four inches, and fitted with three rows of pegs, four inches long, spaced as far apart as plants are desired to stand in the frame. At either end pegs extending beyond the sides serve as guides. The popular distance for setting in the cold frame is 4½ to 5 inches each way. Commencing at one end of the frame the spotting board is placed crosswise of the bed, pegs down. The men then step on it, their weight pressing the pegs down in the soil. They then get off, lift the board carefully; shift it farther up the bed, with the two guide pegs in their corresponding holes on the outside row just made. They step on again, but before making a second shift, set plants in each of the holes made the first time. After plants are set the board is again moved and plants set in the holes just made. The spotting board not only serves to make the holes for the plants, keeping the rows straight, even and of uniform distance apart, but also furnishes a place upon which the men can work when setting plants across the bed. If soil in the cold frame is dry it is best to moisten slightly a few hours ahead of transplanting, so that the peg holes made by the spotting board will not fill up. When moist enough to keep open the plants will not need water when set. Should plants be short the pegs need not be forced down their full length. The object is to set plants down to the seed leaves, and the depth of holes can be regulated accordingly. After dropping plants in the holes the soil is pressed about the roots with the fingers. Experienced men are selected, if possible, to do the transplanting, as it requires judgment in sorting the plants, so that only the stoutest and best will be set, and great care needs be exercised in pressing the soil firmly about the roots so that it really will be firm. However, if experienced hands are not available it is easy to learn, and rapid progress can be made with this method even by a be-

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ginner. The time required to set plants varies with the individual, but two men can easily set 10,000 a day and move their own sash.

CO-OPERATIVE CREAMERY METHODS

Up-to-date Dairy Carefulness Inspires the Whole Neighborhood to Join in Good Work of Better Products

The organizers of creameries as well as farmers all over Canada will be interested in the problems met and solved by a co-operative creamery in Wisconsin as given in a recent article in Hoard's Dairyman.

The co-operative creamery at West Salem, was organized in 1891 with one hundred and twenty-nine stockholders, who have increased to over four hundred at the present time. The cream is gathered from the different patrons three times a week in summer and twice a week in winter. Each hauler is required to put up sufficient ice to take with him in warm weather to keep his cream sweet, as it is drawn as far as fifteen miles. They are also required to sign a contract making them responsible for the cream after it is delivered to them, the hauler or the creamery company mutually agreeing to forfeit one hundred dollars if either fails to fulfil their contracts. One important feature in the hauling business is the accurate way the weights and tests are kept. The hauler takes a sample for testing from each patron's cream, then sets down the weight. When he reaches the creamery his load is dumped into a vat and weighed, then a sample is carefully taken and tested. When the tester gets through the hauler brings in his tests and weights and they are compared with the weight and test of the whole load. It makes them so careful with their work that the results are surprising, oftentimes they will vary hardly a pound. One keeps tab on the other. Last year one of the haulers fell behind in his figures so much that he resigned. After his cream went to another creamery it fell off materially, showing that he had been favoring his own cream.

Eighteen-mile Routes

The average length of the routes out and back is about eighteen miles, which is quite hard work for horses, especially in spring and fall when roads are bad. It isno unusual sight when the frost is coming out to see four good horses bringing in from twelve to sixteen cans of cream at a load. Like mail carriers they must get through if possible. As a rule the routes are let so that the teams are on the road six days in the week in the summer and three to four in the winter, bringing at each trip from six to sixteen cans at a load. Owing to the amount of cream hauled, the distance traveled, and the many small coulie farms that have to be visited, the patrons and directors do not think it possible to have it gathered

by the individual farmers themselves. Help is too scarce and the cream would not come in in as good condition as it now does.

The cost last year for gathering was about $1.53 per hundred pounds of butterfat. The work is so well organized and carried on, that little or no complaint is heard. The haulers seem to be so imbued with the co-operative spirit in the work that they seem to vie with each other to see who can do the best work; being furnished with plenty of hot water and steam they wash their own cans before going home. The cost of hauling has gradually increased with the increase of wages and horse feed for the several years past, as if it were keeping pace with the high cost of living and the increase of taxes.

Buttermilk is Sold

The price paid for butterfat the last year was on an average about 38 cents per hundred, is deducted. The butter- per hundred, is deducted. The buttermilk brings between one and two thousand dollars, most of it being sold to farmers at 15 cents per barrel and drawn from one to five miles into the country. Lately, quite a little buttermilk has been shipped to La Crosse and sold for drinking purposes, some preferring it to beer. Quite a little of the cream and milk produced during the summer by the farmers in this vicinity is shipped to La Crosse, when it should be retained and sold to help home industries. The price being a little better, some of the farmers living from one to three miles from the depot avail themselves of it, but they are glad to come back to the creamery in the winter when the city demand falls off. These city patrons usually club together and save time by hauling each other's milk or cream.

This creamery came within about sixteen thousand pounds of making one million pounds of butter the last year, and the million mark will be reached the coming year, if outsiders do not continue to raise their prices and buy many of our best cows, for nearly 600 of them were sold and shipped away last year. However, the increase in the price paid for butter made last year the most profitable of any in its history, by between fifty and one hundred thousand dollars.

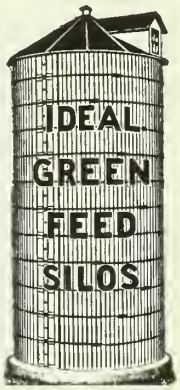
While we have many farmers who are joined to their idols of keeping unprofitable cows, and refusing to read good dairy literature, still I believe that the taking of the cow census and comparing their work and receipts with their neighbors has caused a desire in many to breed better dairy cows. During the past eight months over two hundred head of registered Guernseys, besides some of other breeds, have been unloaded at our station; also quite a number of full bloods have been raised by the fifteen or twenty breeders, most of whom are patrons of the creamery in the village.

DE LAVAL EQUIPMENT

For Farm, Dairy or Creamery

DE LAVAL equipment is first, last and always high grade and dependable and includes only such machines and supplies as are known to be absolutely reliable and "standard."

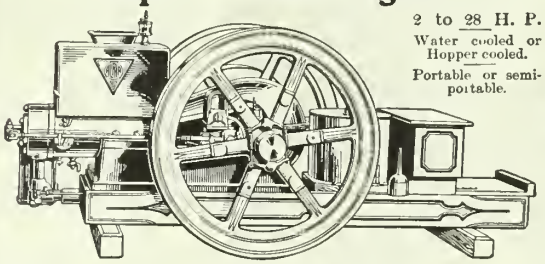
Ideal Green Feed Silos



IT isn't too early right now to plan for the erection of a silo next summer.

The more you investigate the advantage of having succulent silage to feed your cows all winter, the sooner you will decide to erect a silo; and if you thoroughly investigate the silo question you can scarcely escape the conclusion that the Ideal Green Feed Silo is the best silo for you to buy.

"Alpha" Gas Engines



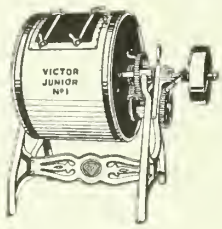
2 to 28 H. P.
Water cooled or Hopper cooled.
Portable or semi-portable.

Uses all fuels.
Easy to start.
Equipped with magneto.
Develops full power.

The most convenient, reliable and economical power for the farm, dairy, creamery or shop

THE "ALPHA" Gas Engine is the highest grade and most reliable engine that you can buy for any purpose whatever; but on account of its simplicity of construction and reliability of operation it is unusually well adapted for farm use.

Dairy and Creamery Supplies



VICTOR CHURNS

THE DE LAVAL line of dairy and creamery supplies for milk dealers, creamerymen, cheese makers, and dairy farmers is by far the largest and most complete in Canada. We handle nothing but high grade goods, and successful dairymen know that this is the only kind they can afford to buy.

Our Service Department insures proper installation of all machines and supplies and is always ready to co-operate with our customers.

We issue catalogues of each line
Any of these mailed upon request

DE LAVAL DAIRY SUPPLY CO., Ltd.

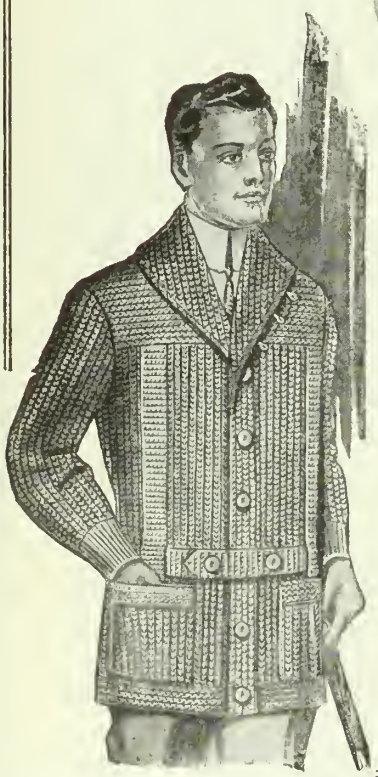
LARGEST MANUFACTURERS OF DAIRY SUPPLIES IN CANADA

Exclusive Canadian distributors of the "World Standard" De Laval Cream Separators

MONTREAL PETERBORO WINNIPEG VANCOUVER

The Newest in Sweater Coats

The latest styles and creations are always found in Monarch Knit Products. Herewith are shown three of the newest. Note the neatness and grace of these coats.



"Monarch Knit"

is the standard for style, quality and workmanship. Satisfaction always.

Ask Your Dealer for Monarch Knit.

MONARCH KNITTING CO., LTD.
Head Office: Dunnville, Ontario, Canada
Factories at: Dunnville, Ont.; St. Catharines, Ont. St. Thomas, Ont.; Buffalo, N.Y.

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The MacLean Publishing Company

143-153 UNIVERSITY AVENUE, TORONTO

A Garden of Roses

(Continued from page 38.)

shoot with only two or three buds on. Tie the canes to the trellis at once when pruned, unless very cold weather sets in.

Hybrid Perpetual and Moss Roses

These should be pruned at the same time and much in the same way as recommended for climbing roses. Cut out any dead growth and the weak shoots starting from the bottom and thin out any very old branches. Leave two or three strong young canes that start from the bottom of the bush among the older growth, so as to keep up a supply of strong young growth. Then cut back the young side shoots of the last season's growth on the older growth left, leaving only a short spur with two or three buds on it at the base of this side growth. Shorten the tops of the main branches so as to make the bush shapely looking. Small, weak, unshortened growth is of no use to produce roses, it should be cut back leaving only a few buds at the base of the shoot.

Brier Growth

Most all of the Hybrid Perpetual, Moss, and some other kinds of roses are budded or grafted on Manetti or Brier root-stocks. When planting budded roses, remove carefully all buds or growth showing below the junction of bud or stock before planting, as these will produce only wild brier growth, not rose growth. Later on a close watch must be kept and all brier growth must be cut out as soon as found or it will eventually kill out all the rose growth, leaving nothing but brier growth. This is best done when the plants are in leaf. Usually the brier growth has seven or nine small leaflets on each leaf, and the Hybrid Perpetual Rose leaf only five leaflets (see photo). When two branches, one with seven to nine leaflets and one with five leaflets are found on the same plant, the one with seven or more leaflets should be cut off close to where it joins the root stock. Many good rose bushes are killed out by the brier growth overpowering and killing out the rose growth. Moss roses and most climbing roses have seven or nine leaflets to each leaf, so these must not be taken in mistake for briers. Own-root roses are much better than budded or grafted roses, as there is no danger then of this spurious brier growth being found, all of the growth will be pure rose growth and will produce roses the same as the original plant. Roses on their own roots are slower growing than budded or grafted roses, but they are far more hardy and enduring. I have had own-root roses of General Jacqueminot and other well-known varieties growing for upwards of twenty-five years and then were in good condition, when budded roses of the same varieties had to be replaced three or four times during that time. Most of the strong growing varieties do well on their own roots. This is a good opening for some enterprising grower to

introduce own-root Canadian grown rose bushes, as many rose growers have become disheartened at the poor success attained, often from the short life of the budded or grafted roses for the reason given.

Insect Pests and Diseases

These are the greatest drawback to rose growing. Greenfly, Red Spider and what is known as the Rose Thrip, a small white fly-like insect that secretes itself under the leaves are the worst insect enemies of the rose. For all of these, spraying the foliage in very hot, dry weather in summer every day or two with clear or soapy water, is one of the best preventatives of all these insects. Dusting the under side of the leaves when damp with dry fine soot or wood ashes is a partial remedy. Another easily made remedy is to take one part of slightly sour milk and two parts of coal oil. Mix these well together first, then add twenty parts of water and mix thoroughly. I have found soapy water in this solution to be the best. Apply in a fine spray to under side of leaves especially, so as to thoroughly moisten them. A fine spray thoroughly applied is better than a deluge of water from a nozzle sprayer. A knapsack sprayer is very handy for the purpose. A preparation called Sulpho-tobacco soap, sold at seed stores is a good insecticide. Spray the plants about every week or ten days from the last week in May until the end of July at least. Spray in warm weather only.

Rose Slug. A slimy caterpillar about half an inch in length also attacks the leaves and buds of roses. Dust the foliage when damp (not wet) with white Hellebore powder. Use a baking powder tin with perforated lid for applying powder.

Diseases. The only diseases that bother rose growers much are the downy mildew, a white flour-like substance that appears on the leaves usually towards fall, and the black-spot. Both are fungous diseases, the last named being the worst. Small black spots appearing on the leaves that spread to all the foliage causing it to shrivel up and drop, almost stripping the bush of its leaves in a short time. The best remedy for these diseases is to spray the bushes very early in the spring before growth starts with the lime-sulphur preparation as used for fruit trees in early spring. Later on, when the leaves have developed, the plants may be sprayed with Bordeaux mixture, or the plants dusted when dry with fine flour of sulphur. All old leaves and trimmings should be carefully raked up in early spring and burned to prevent the disease spreading. Much can be done to prevent insect pests and diseases by spraying as directed with clear water or soapy water alone in hot weather. Early and thorough applications are the main points in applying insecticides. "Scollay's Rubber Sprinkler" is a good appliance for putting on liquid solutions, and the "Jumbo Powder Gun" for dry insecticides. Both can be purchased at seed stores.

Every puff of P. A. is a wallop!

Get *that* punched into your system!

Never was such jimmy pipe tobacco, because no other tobacco but P. A. ever was made by the patented process that *cuts out* the bite and the parch!

You, and every other man, can smoke a pipe all you want if you'll only get wise and stick to

PRINCE ALBERT

the inter-national joy smoke

It's true blue sport to open the A. M. with a jimmy pipe packed full of P. A. So fresh and pleasing and so fragrant that the songs of little birds and puffs of joy smoke just put the music of the early sunshine right into your system!

Get the idea?

R. J. REYNOLDS TOBACCO CO.
Winston-Salem, N. C., U. S. A.

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Prince Albert is the largest selling brand of pipe tobacco in the United States.

Buy Prince Albert everywhere in the tidy red full 2-ounce tins.

A Good Chance to Increase Your Income

We have put four hundred young and old business men in Canada in the way of earning $5.00 more every week. If you are an enterprising man, you can get the same offer by writing us. The work is easy, educative and profitable.

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THE MACLEAN PUBLISHING COMPANY
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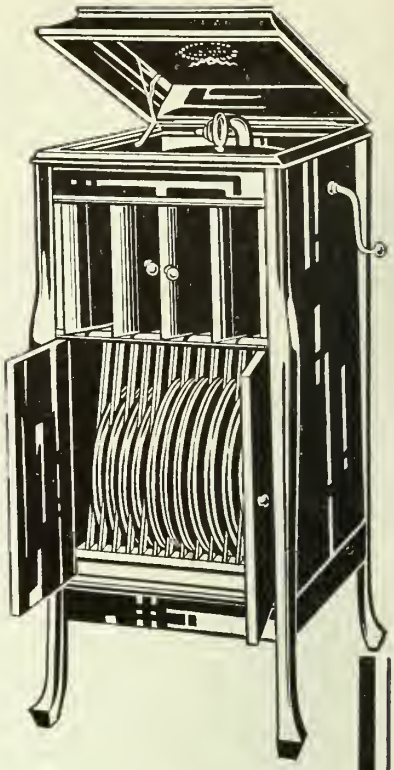
HERE'S REAL ENJOYMENT FOR ANY HOME

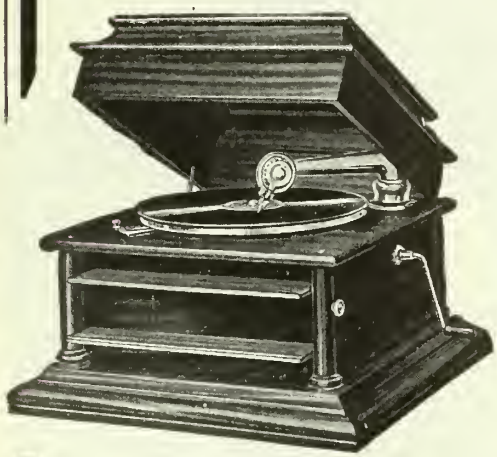


All the world's best music is at your command. After the day's work the Grafonola supplies an entertainment for your family and your friends that cannot be surpassed. There is no such thing as a dull evening where a Grafonola exists.

THE "LEADER," $100 CASH

Here is the best moderate-priced machine ever made. The Leader is an ornament to any home and will harmonize well with the best furnishings in your house. With 12 standard double disc records of your own choice, we will place this machine in your home for $120—cash payment $20—monthly payment $10.

ON CONVENIENT TERMS



THE "JEWEL," $45 CASH

This machine is one of the 1914 models, and embraces all improvements in talking machines up to date. Our convenient payment system places it in your home on a cash payment of $8 and monthly payments of six dollars. On these terms we will sell you the machine with 12 double disc records for $58.

Our Plan is Simple

There are no strings to these offers. If there is any other Columbia machine you prefer we will forward our Catalogue and you can make your choice. All machines on convenient terms and delivered following receipt of cash payment. **Write to-day for Catalogue.**

WINNIPEG PIANO CO.

333 Portage Avenue - WINNIPEG, MAN.

Columbia Records Note the Notes

Our Pattern Pages

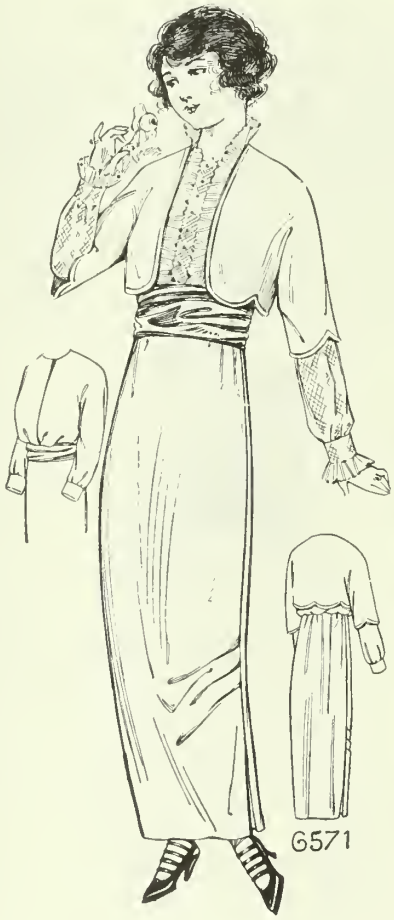
Patterns will be sent Post Free on Receipt of Price. Address Pattern Department, Farmer's Magazine, 143-149 University Avenue, Toronto

6576—LADY'S DRESS

In this dressy costume we have a suggestion for charmeuse, crepe, satin, silk and other soft, clinging fabrics. The blouse is very loose and the shoulder seam is placed almost at the elbow. There is a small vest with tabs at the ends of the front opening over it. The two-piece skirt is joined to a short panel, which forms the centre of the front. The dress pattern, No. 6576, is cut in sizes 34 to 44 inches bust measure. Medium size requires 3½ yards of 54-inch material, with 1 yard of 27-inch silk for revers, collar and girdle. Price of pattern 10 cents.

6571—LADY'S DRESS

This highly novel costume has a blouse in one piece over which is worn a bolero also in one piece, showing a vest effect in front. The two-piece skirt is full at the waistline and has a drapery suggestion at the knee. The underblouse may be of lace or net and the outer portions of cashmere, messaline, twilled fabrics or simple serge. The dress pattern, No. 6571, is cut in sizes 14, 16, 18 and 20 years. Medium size requires for skirt and bolero 3¼ yards of 36, 44 or 54-inch material; for waist, 2⅛ yards of 36-inch net. Price of pattern 10 cents.



6446---LADY'S WAIST

The surplice style is the leading one in waists at present. In the illustration we have one which shows a pretty chemisette where the fronts cross over each other. It has a sleeve which is plain and loose and which may be full length or shorter. This style is suitable for all soft materials and moire, velvet or satin can be used for the collar and cuffs. The pattern, No. 6446, is cut in sizes 34 to 42 inches bust measure. Medium size requires 2¾ yards of 36-inch material, with ⅝-yard of 22-inch allover lace. Price of pattern 10 cents.

Our Home Treatment for the Cure of

GOITRE

has been wonderfully successful. It has saved many men and women afflicted with "Thick Neck" from undergoing a severe operation, besides improving their general health. Read what one grateful woman says about our

GOITRE SURE CURE

"Having been convinced of the good which your Goitre Sure Cure has done for me, I now feel it my duty to recommend it to any person troubled with goitre. It has almost perfectly cured me. I cannot express in words my thankfulness for what it has done for me. Thanking you again and again for what you have done for me in the past."—C. E. F., Box 513, Pictou, N.S.

Goitre Sure Cure is made up of internal and external remedies. Price $2.00, express paid.

We treat Skin, Scalp, Hair and Complexional troubles of all kinds at home and in our offices here. We remove

SUPERFLUOUS HAIR, MOLES,

Warts, Red Veins, etc., permanently and satisfactorily by our reliable method of Electrolysis. This treatment is absolutely and positively the only sure relief.

Booklet "F1" and sample of Toilet Cream mailed free.

Hiscott Dermatological Institute

Hiscott Bldg., 63 College Street, Toronto

Established 1892.

The

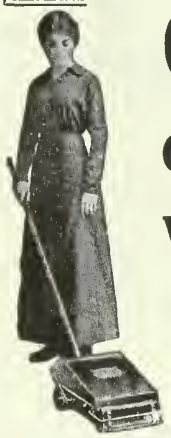
Cadillac

Combined

Carpet Sweeper

and

Vacuum Cleaner



will save you much hard work, keep your home clean, bright and sanitary.

These machines are made in Canada, hence you save the duty in buying a Cadillac.

The mouth-piece of this cleaner is wider than other machines, hence it enables you to get the work done more quickly.

Write for our Booklet telling all about the "Cadillac." We will refer you to our Agent in your town, where you can see the "Cadillac" at work before you buy it.

We also make the "Cadillac" Electric Vacuum Cleaners.

Drop us a letter or post-card now for the booklet, giving full information.

The Clements Mfg. Company, Ltd.

78-82 Duchess Street, - Toronto, Ont.

WINDSOR DAIRY SALT

is making money for thousands of Butter Makers

It is always the same in quality, dissolves evenly, gives a delicious flavor — and makes the butter keep.

USED BY ALL PRIZE WINNERS.

118

Springtime Freshness

can be easily and economically restored to your own wardrobe, the children's clothes, and the curtains and cushions of your home with

Maypole Soap

The Quick, Clean Home Dye

Without any mess or bother, MAYPOLE SOAP washes amd dyes at one operation, giving to woollens, cottons, silks or mixtures, rich, even colors that are clean, brilliant and fadeless in sun or rain.

24 colors—will give any shade. Colors 10c., black 15c., at your dealer's, or postpaid, with booklet, "How to Dye," from

FRANK L. BENEDICT & CO.
MONTREAL

6570—LADY'S DRESS

Loose in every line, this frock has a deep, seamless shoulder yoke, with very low seam where the plain, full-length sleeve is attached. Below the yoke the material is quite full and the open neck has an inner vest and an outer collar and

revers. The one-piece skirt hangs in long, straight folds in front, but is draped bustle fashion in the back. The dress pattern is cut in sizes 34 to 44 inches bust measure. Medium size requires 3⅞ yards of 50-inch material, without seam at back, or 5½ yards of 36 or 40-inch goods with seam. This pattern can be obtained by sending 10 cents to the office of this paper.

-----STYLES-----

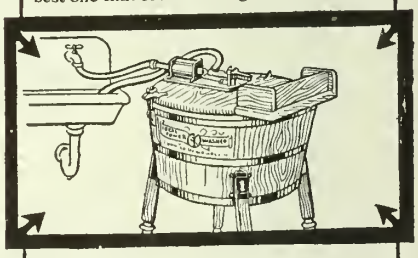
carried to extremes, are usually ridiculous.
Of course you don't want to be ridiculous but you **do** want to be stylish.
There is no way in which you can add so much of style, so inexpensively, to your new dresses as by the use of covered buttons. Of the same shade or of contrasting color, they form a trimming that is in the best of taste and the height of fashion.
We are able to supply you or make to your order any style or color of button—as well as pleating, hemstitching, scalloping, etc.

For prices and booklet, write

TORONTO PLEATING COMPANY
Dept. F TORONTO, ONT. 3

THE "IDEAL" IS PARAMOUNT

If the Water Motor of the Ideal Washer was its only feature, it would still be the best one that could be bought.



But it is only one of many and the combination makes the Ideal unique among washing machines.

There is a patented feature that prevents warping and another that gives rigidity, strength and durability.

Investigate this washer at your dealer's or send to us for information.

CUMMER-DOWSWELL Limited
Hamilton, Ontario 204

BUY IT BY THE BOX—50 CENTS
GENUINE
SPEARMINT GUM
A Dollar's Worth by Mail, Postpaid, for 50 Cents. Stamps or Coin
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FOR THE HOUSEWIFE

In order to let every housewife know and share in the many advantages of the wonderful non-injurious Bull Dog products we will, for a limited time, send to everyone a sample package of

Bull Dog Ammonia Powder

Bull Dog Liquid Blue

Send card to Dept. F, and receive list of beautiful premiums given away with our products.

If 10c. is enclosed, we will send you a full-sized package of "BULL DOG DYE."
(Send sample of shade required.)

The John B. Paine Co., Ltd.
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LARGE GOLD-PLATE CLOCK

We will give this beautiful clock free of all charge to any lady who will sell forty sets of our Easter and other post cards at 10 cents a set (six beautiful cards in each set).

The clock is a perfect timekeeper, in beautiful and artistic gold-plate frame, just like picture. It is nine inches tall, and will grace the parlor of any home. Your friends all want cards and you can easily earn a clock in a few hours.

Send us your name, and we will send you the cards. When they are sold send us the money, and we send you the clock, carefully packed, and all prepaid. Address

Homer Warren Co.
Dept. 256 - - TORONTO

HOME DYEING

Is **CLEAN,** and as **SIMPLE** as "A.B.C." **NO** chance of **MISTAKES** if you use

DY-O-LA

The Guaranteed **"ONE DYE** for **All Kinds** of Cloth."

TRY IT and prove it for yourself!
Send for Free Color Card, Story Booklet, and Booklet giving results of Dyeing over other colors.
The Johnson-Richardson Co., Limited, - Montreal

6366---BOY'S RUSSIAN SUIT

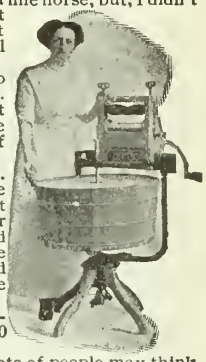
While the Russian suit remains the proper dress for little boys it is now cut on straighter lines. Our model also has a very low, diagonal closing, with the popular vest in front. There is also a wide collar at the neck. The sleeves are tucked at the wrist, but may be gathered into a cuff. Little bloomer trousers complete the suit which may be of wash material or of light weight woolens. The pattern, No. 6399, is cut in sizes 2, 4 and 6 years. Medium size requires 2⅜ yards of 44-inch material. Price of pattern 10 cents.

6487---CHILDREN'S DRESS

Dainty and novel, this dress is closed at the back and is plain in both front and back, the front having a box plait folded in at the waistline. The sleeve is plain and is full length or shorter and an ornamental sash completes the frock. Linen, duck, moire, cashmere, cheviot and serge are suitable for frocks in this style. The pattern, No. 6487, is cut in sizes 2, 4, 6 and 8 years. Medium size requires 1⅞ yards of 44-inch material. Price of pattern 10 cents.

THIS WASHER MUST PAY FOR ITSELF.

A MAN tried to sell me a horse once. He said it was a fine horse and had nothing the matter with it. I wanted a fine horse, but, I didn't know anything about horses much. And I didn't know the man very well either.



So I told him I wanted to try the horse for a month. He said "All right," but pay me first, and I'll give you back your money if the horse isn't all right."

Well, I didn't like that. I was afraid the horse was'nt "all right" and that I might have to whistle for my money if I once parted with it. So I didn't buy the horse, although I wanted it badly. Now, this set me thinking,

You see I make Washing Machines—the "1900 Gravity" Washer.

And I said to myself, lots of people may think about my Washing Machine as I thought about the horse, and about the man who owned it.

But I'd never know, because they wouldn't write and tell me. You see I sell my Washing Machines by mail. I have sold over half a million that way. So, thought I, it is only fair enough to let people try my Washing Machines for a month, before they pay for them, just as I wanted to try the horse.

Now, I know what our "1900 Gravity" Washer will do. I know it will wash the clothes, without wearing or tearing them, in less than half the time they can be washed by hand or by any other machine.

I know it will wash a tub full of very dirty clothes in Six Minutes. I know no other machine ever invented can do that, without wearing the clothes. Our "1900 Gravity" Washer does the work so easy that a child can run it almost as well as a strong woman, and it don't wear the clothes, fray the edges, nor break buttons, the way all other machines do.

It just drives soapy water clear through the fibres of the clothes like a force pump might.

So, said I to myself, I will do with my "1900 Gravity" Washer what I wanted the man to do with the horse. Only I won't wait for people to ask me. I'll offer first, and I'll make good the offer every time.

Let me send you a "1900 Gravity" Washer on a month's free trial. I'll pay the freight out of my own pocket, and if you don't want the machine after you've used it a month, I'll take it back and pay the freight too. Surely that is fair enough, isn't it.

Doesn't it prove that the "1900 Gravity" Washer must be all that I say it is?

And you can pay me out of what it saves for you. It will save its whole cost in a few months in wear and tear on the clothes alone. And then it will save 50 to 75 cents a week over that in washwoman's wages. If you keep the machine after the month's trial, I'll let you pay for it out of what it saves you. If it saves you 60 cents a week, send me 50 cents a week 'till paid for. I'll take that cheerfully, and I'll wait for my money until the machine itself earns the balance.

Drop me a line to-day, and let me send you a book about the "1900 Gravity" Washer that washes clothes in six minutes.

Address me personally **W. C. Morris,** Manager
1900 Washer Co., 357 Yonge Street
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How Mary Jane Made Good

What One Girl Could Do For Her Home and Her Community

By ETHEL M. CHAPMAN

A HOT sun streamed into a farm kitchen where a woman was washing. The room was uncomfortably warm and steamy, but she didn't notice that; she lifted a boiler full of clothes from the stove, fished them out into the tub, glanced uneasily at the clock and fell to scrubbing desperately on the washboard. In two hours the men would be in to dinner and she wondered nervously what she could have for a change. She was a good cook, this woman, but years of preparing meals always with a dozen other jobs dogging at her heels, with no new ideas coming in and others dying out for lack of time to apply them, had put her cooking into a hopeless rut. Her husband reminded her of this occasionally when he came home from a hotel dinner on council-meeting or fair days, but it didn't occur to him that if he had no more capital or returns or outside inspiration for his farming operations than she had for her housekeeping, he would still be building stump fences and cutting his wheat with a cradle.

She soaped the collars and wristbands of a heavy blue jean shirt and scrubbed until the wisps of grey hair fell down over her face. A worn, tired face it was, patient and gentle and worried—worried to-day over something more than the common washing of clothes and getting meals—to-night Jane was coming home from college.

Not a year ago they had worked together in the same old awkward kitchen with the same old awkward tools getting Jane's things ready for going away, and the girl's steady brown eyes with tears swimming just beneath the surface had looked across at her mother, frail and bent and older than her years—and with a brave attempt at cheerfulness, she had said, "Just ten months, honey, and I'll be back again, knowing how to make it all easy. Then you can rest." And to-night she was coming home, but the mother wasn't thinking about a rest. She was dreading the change for her daughter. Oh, the unselfishness of those mothers who joyfully give the best of their life, energy, and soul and spirit to their children, and then open all doors to them, leaving them in the broad world to follow their own paths and ask for nothing, neither thanks, nor praise, nor remembrance!

She had to leave the washing to get dinner, but as soon as she could get the table cleared she was back at it again. She hung out the clothes, emptied the suds around some straggling nasturtiums and cucumber vines, then blackened the kitchen stove until it shone, and scrubbed the unpainted pine floor until it glistened, scarcely noticing the sharp ache in her limbs as she moved from one "reach" to another. At college, of course, everything would be kept spotlessly clean and Jane would know just how many germs were in every grain of dirt. The train whistled at the station half a mile away before she had finished and she drove the scrub brush more furiously than ever until the last corner was done. She hadn't time to change her dress, but then it did not matter much about that—she had come to consider herself always last; she just twisted her hair up a little tighter and got a clean apron. Then there was a quick rush up the front steps and a clear strong voice called out, "Where's mother?"

"Is a college education any use to a farmer's daughter?" We know that some parents have doubts regarding this question; they cannot understand just how a course in a Home Economic school can do anything for a farm girl except to make her dissatisfied with home conditions, although numbers of graduates every year, are finding a useful and interesting field at home. Every one admits that the country needs its girls at home. Almost every sociologist has advanced methods of keeping them there. If you have been disappointed in some of these, why not give your provincial agricultural collage a trial? You have been contributing to its support for years; it is time you were getting something out of it; and more important still, there are the girl's interests to consider.—Editor.

"Where's mother?"—This must have been the first question we ever learned to ask, long before we could put it into words, and we have been asking it ever since. When things went wrong in our playing, when we came home from school hungry and fretful, whenever we had some little triumph or joy or perplexity, even after we thought ourselves grown up, that was always the first question when we came home, "Where's mother?" And when the time comes that there is only the one long, silent answer, the days we spent with her when she needed us will be counted the most precious of our lives. Happily the girl realized this in time. With the thin, bent shoulders under her strong arms and the tired face smiling proudly into her own, she saw what the years of drudgery were doing, as she probably would not have done had she never been away.

And Jane went to work. She kindled the fire and took stock of the pantry; the men would be in to supper at five o'clock.

"I really haven't any baking," her mother apologized genuinely mortified. "They don't care much for cake and since the rhubarb is done its hard to get pie-sauce There are potatoes to warm, and eggs, though they are getting tired of that. There's a small can of salmon on the shelf there, but it wouldn't begin to go around."

But the college girl was glowing like a prospector when he catches the first glimpse of a vein of yellow sand. There were eggs and milk and cream and fresh butter in abundance. Vhat couldn't be done with and milk generously with the salmon, explaining glibly as she worked, how much nutriment the finished custard would contain. She began mixing salad dressing for the cold potatoes, but her mother warned her timidly, "I'm afraid your father won't touch it. He isn't much for new things." She didn't want to see Jane discouraged, and right at first, too. But the girl was confident—this was one of the good things the year at college had done for her—she knew she was right and she wasn't afraid of anyone's opinion. She just went right on giving a demonstration lecture on the wholesomeness and palatability of a

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potato salad with lettuce and hard-cooked eggs for a hot-weather supper. Then she brought cream from the cellar and made fresh biscuits, got out a fresh tablecloth, worn and old, but clean and easily laundered, put a bowl of lilacs in the centre and set the table. It was the beginning of many meals planned from the standpoint of a dietician, an artist and economist—an economist at least in making the most of the resources at hand.

That night the girl laid awake a long time, listening to the sleepy chirp of a restless cricket, and the wind in the apple trees. It was quiet—lonesomely, strangely quiet—but it was home. Last night they had sat, cross-legged, on the floor of the college gymnasium, a circle of a dozen girls and looked ahead. with the one common ambition—to "make good." Most of them were taking positions, a few were going to be married, she alone was going back home to the old country neighborhood—it didn't make any difference. There was just as big a scope here as anywhere if only she could prove herself big enough to fill it.

In the morning Jane came downstairs early, rigged out in one of the blue cotton uniforms that had been a necessary part of her college wardrobe, and very cool and neat it looked with the short sleeves and low white collar. Her mother wasn't in the habit of making work-dresses, she felt it a necessary economy to finish out a good dress for everyday work, even though it be made of black serge with cumbersome trimmings.

"Mother, you should have some uniforms," the daughter declared, and the mother suddenly remembered some grey print she had had in the house for over a year, but had never had time to make it up.

And while the mother sewed Jane reconnoitered her field.

There were many things that might be done to improve the house. In the first place the kitchen would have to be done over. It was gloomy and inconvenient, with drab-painted woodwork and heavy blue wall-paper. The sink was iron and rusty. There were no cupboards, just a low sideboard and a dark closet under the stairway. The pine floor was worn and uneven, and the soft porous wood seemed to absorb every particle of dirt that came near it, defying every method of cleaning other than the scrub brush and soft soap. The girl had a vision of what that kitchen would be with the paper off and the walls painted a light yellow or grey-pink, the woodwork in a corresponding tone or pure white. The sink white enameled, a deep roomy cupboard built across one end, little short muslin curtains at the windows, and linoleum—there would simply have to be linoleum for the floor after the knots were planed down. Then the other rooms needed attention, too. The bedroom carpets should be cut up into rugs; they were getting worn in places anyway. The stiffness and mustiness would have to be shaken out of the parlor. The dining room

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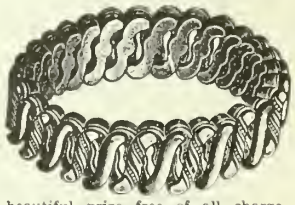

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could be made perfectly charming with some burlap and a plate rail, and oh, dear! where was the money to come from. It isn't the first time this question has brought a woman up short in planning new things for her home.

Of course, there was money in the farm, and in the bank; her father could afford it, but she had no intention of asking him for money—at least not until she could convince him that he was going to get something out of it. Perhaps after a while he would become educated to the value of improvements in the house, but for the present, whatever she did, she would have to do alone.

"I suppose," she mused, "I might keep bees, or poultry, or grow fruit, but at present I don't know anything about bees, it would take a year at least to get any returns from poultry, and July is no time to go into fruit-growing. I want the money now."

Then suddenly the idea came—I wonder that more girls have not thought of it—the cows you always have with you. "Father would never object to keeping any number of cows, in the summer," she reasoned, because he knows what it means to the calves and pigs. There are six cows now, we can't sell the cream, so it means a lot of work, but we have the butter to keep the house going, and there must be something in it."

That night she looked over some bills that had come back with the weekly supply of groceries from the local store. They always led off with a pound of tea and ended with the balance in sugar —necessities surely, but there were some items between that troubled her a little, like—"Six pounds rolled shoulder" (and how many pigs were sold off the place not six months ago?) "Five pounds lard," (She wondered if her mother knew that butter and cream at this season were less expensive and beyond comparison in quality.) "Four cans corn," "Three cans tomatoes." (Next year she would show that it was not impossible to can these at home and have them keep perfectly). For a while she did some close figuring. If she could manage to get a butter-worker, the hardest of the work, lifting and the tipping of the bowl would be done away with. She wouldn't like the milking very much, but it wasn't impossible. Then she went to her mother with her plans and asked for the management of the dairy business for a month, drew up a system of bookkeeping for the household accounts and went to it.

One hot July evening an old neighbor coming into the barn to borrow a fork stopped with a little amazement to find the college graduate clothed from head to foot in a gingham pinafore milking the sixth of her dairy herd. "I say Jenny," he exclaimed with honest admiration, "A fellow'd soon get his place paid for if he had you." But Jenny had all she could attend to and didn't answer. The cow switched and stepped and the girl hitched her stool after her, tucked her apron around a little closer and went at it again. "I say now," continued the old man, "just for curiosity sake, would you marry a farmer after bein' to college?" The reply wasn't delayed this time. "It would depend some on the farmer," came snapping back from the sunbonnet, "but I wouldn't marry any man to support him at this job."

She was just beginning to realize what this must mean to dozens of farmer's wives in the neighborhood. Of course, it was different for a girl. She could go into the house and change her clothes, and have the evening to do whatever she liked. It was just as dignified as any other work; buttermaking itself was a fine art, but what about the women who did all their work alone and ran a dairy business single-handed to keep the house going, with little children needing their attention and numberless other demands on their time and vitality? For the present she needed the money to fix up the house, and much of the work was pleasant enough, but she decided that it was time to begin agitating for a co-operative creamery. With the churning and buttermaking done away with, it would be possible and profitable to keep a dozen or twenty cows and an extra hired man—and would take just a step more to have a co-operative laundry run by the same power as the creamery. It was a common arrangement in many parts of the States, and why couldn't it be worked here? It was rather galling to think that that country always had to teach the rest of the world how to save its women.

At church on Sunday, Jane didn't hear much of the sermon. She just looked around and wondered. The same people came in and sat in their respective pews just as they had done before she went away, but they looked different, at least the women and girls did. There weren't many men there—just the elders and a few householders who came to bring the children to Sunday school. Most of the older women were tired-looking, like her mother, and too sober. Was their work responsible for it all? She concluded that it wasn't. Why, when they met in the lobby they seemed just a little strange with each other. In times of sickness or trouble they would do anything for a neighbor, but between times they had little social intercourse. She decided that she would have an "at-home" for her mother the next week, and invite them all and get them mixed up. It was company they wanted more than anything else. Then why not have a Women's Institute right in the neighborhood? A few women attended the meeting in the next town occasionally, but the majority of them thought it was too far to go. It didn't require a great stretch of the imagination to see what an institute would mean.

Then she looked at the girls. They were worth looking at. Well-dressed, and generally refined and pretty, they were, but not as positively bright as girls should be. They didn't walk as though they would rather skip, and their faces didn't look as if they saw visions. They needed something to think about just as she had done and they needed exercise out of doors. What things people would say if they heard of that! As though girls couldn't find enough to do for exercise at their work! But there's a difference in the exercise you get carrying water and chasing a tennis-ball. The one, if overdone, pulls the muscles out of place and strains both nerves and spirits, while the other loosens up nerves, puts a habitual spring into the muscles and makes you wholesomely, happily tired.

Before fall the girls had a tennis court and were making plans for an open-air skating rink for the winter. They got the co-operation of their brothers in this so the problem was not so difficult. The boys had been in the habit of driving to the town rink two or three nights every week during the winter, but the mothers did not believe in letting the girls go to a public rink, so they had stayed at home. But this was not going to furnish everything they needed. As the fall evenings began to lengthen Jane thought more and more of the close, helpful talks they had had in their Y. W. meetings around the hearth fires in the college drawing rooms. Why couldn't they have just as good times here? The Young Women's Christian Association was never intended to be confined to cities; some day it will be doing its best work in the isolated districts of rural Canada. It didn't take long to plan a programme for the winter. Besides the regular routine they decided to take up a reading course of "home science" literature, it was the most practical and decidedly the most interesting topic they had discussed ever since Jane came back, and this was the best way to learn more about it at home. Of course, as a society they would have to "do something," something philanthropic, and someone suggested the happy idea that each girl entertain two "fresh air" children from the city for a couple of months the next summer, to experiment and see just what her knowledge of human nutrition and hygiene was worth. A farm girl doesn't need to go away from home to find ample scope for welfare work.

But there is always a danger of one-sidedness in betterment movements. While the girls in the neighborhood held their Y.W.C.A. meetings on Thursdays, every Friday evening saw most of the young men of the neighborhood pressing their trousers and driving off to a ball in a neighboring town. The mothers fretted and the fathers stormed (mostly to the mothers after the boys had gone), but what was to be done? It wouldn't be very practical to have a dance every week at home and possibly wouldn't improve things a great deal anyway. In certain country districts of Ireland, I believe, they have an open-air pavilion erected at every cross-roads, where the parents come out and watch the young people dance for an hour or two every Friday evening—a beautiful social custom surely, and one which might be well worth trying here. However, it wouldn't work very well in the winter time, and meanwhile conditions were not improving. Then Jane men-

tioned a "Union Lit." It takes nerve for a girl to suggest such a thing as a literary society and undertake to see it through, but she can generally find a few older heads in the community who are public-spirited and capable enough to help her, and once a literary society is organized and started, with a few good generals in the background, it will almost run itself for one season.

Two years later Jane's old class, the girls who had set out with the one ambition to "make good," had a reunion picnic on the college campus. They met chiefly to hear one another's "experiences." Some of them had had wonderful successes, most of them had thousand-dollar salaries, a few had babies, but the successes and the salaries looked pale in the light of the straight simple story of what one girl could do for her home and her community. Of course the babies were given first place,—you couldn't get past that, but there never yet was a neighborhood without a few children who needed mothering. Jane had them to teach at Sunday school; sometimes she played with them to re-the school teacher at noon hour and she had won a reputation that gave her many a midnight call when they took spasms or croup. And—it's a wonderful privilege to be allowed to practise on other people's children.

LONGING

By ARTHUR WALLACE PEACH

How often in the after years when time
Has touched us lightly with his frosty rime,
In silent moments never spoken of,
We long to know again a mother's love.

Bright gold, hard labor's guerdon, may be ours,
And fame have brought us satisfying dowers,
Yet in the moment when our life has all—
All would we give to hear her gently call.

When fevered with the fret of life and toil,
The strive of living, and the day's turmoil,
How do we yearn, so deeply and so much,
To feel again the healing of her touch.

When bitter in defeat, by failure stung,
When from the heart, hot, careless words are flung,
How thought brings back, our dark moods to beguile,
The pleased, reproving laughter in her smile!

Ah, mothers, little do you know or guess
How in our secret hearts your name we bless;
How you are present through life's joys and tears,
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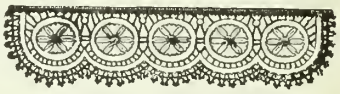

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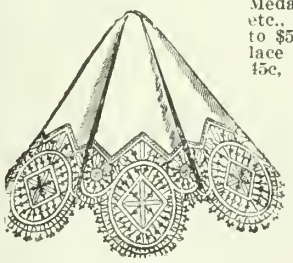

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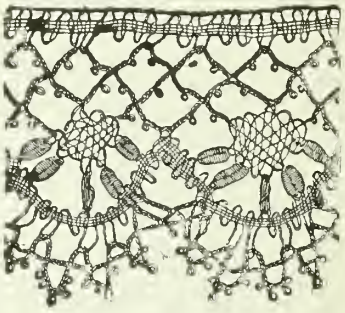

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By GENEVIEVE

THE kitchen should be the first consideration in planning and furnishing a farm home. It is the house-mother's workshop and generally the most popular family rendezvous in the house so it deserves a liberal outlay of means and thought.

Wiping Out the Sins of the Architect

The builder is the first person who needs education along the lines of kitchen requirements, and no one is so well fitted to teach him as the woman whose profession is chiefly kitchen work, and whose life is for the greater part spent inside kitchen walls. As a rule kitchens are badly ventilated, and shoved into some corner at the back of the house regardless of possibilities for sunlight in the mornings, factors which, it is needless to say, do not make for the health or cheerfulness of the occupant. The kitchen should have a sunny exposure with many windows, not necessarily large but well scattered and preferably set high so as not to interfere with the position of shelves, cupboards and sink. Twin casement windows, swinging in, permit the use of a full length screen and make window washing easy. Even where this has been overlooked when the house was built, it is not a very difficult operation to cut in a few windows where they are needed.

An awkward position of the kitchen with relation to the pantry, cellar and dining-room is harder to overcome. If, in the building, the pantry has been set off the kitchen, but not opening into the dining-room, it will save many steps to cut an opening say three feet square between the kitchen and dining- room, conveniently near the range, and having a broad shelf in either room. This makes an excellent "serving wicket," and if closed with a paneled sliding door or art glass window when not in use will not detract from the appearance of the dining-room.

Sunny and Sanitary Finishes

While we may not be radical enough to demand that everything in our kitchen be absolutely impervious to germs—we cannot generally afford tiled floors and glazed walls and if we could our feet and eyes would both soon tire of them—yet there is no denying that everything in a kitchen—walls, and floors, and furniture—should be washable. Wash paper or some kind of paint makes the best wall finish for a kitchen, the paint being preferable because it is so easy to freshen it up once or twice a year, while it is an endless job to get the wash paper off the walls. If the wainscot gets dirty quickly it is a good idea to cover it with white oilcloth, which can be washed off in a few minutes, and gives the room a distinctive air of cleanness.

Hardwood floors seem to be the pride of every housewife, but they are not so easily taken care of, and do not afford such as yielding surfaces as linoleum. If you have hardwood floors in a kitchen you should have washable rugs wherever there is much walking. In no case should there be floors to scrub. They may be very white and pretty when they are freshly cleaned, but they will be more of a comfort to the whole family after being well filled and oiled or painted.

The color of the walls will depend on the individual taste and the way the room is lighted. Pure white gives a striking but rather cold effect, ideal for a kitchen that is purely a food laboratory, but the farm kitchen is generally something of a sitting-room for an hour or two every day and usually serves an occasional turn as a dining-room, so a warmer, brighter decoration is better. Unless your kitchen is very light no more cheerful color than yellow can be used, or a very pretty effect is secured by a greyish pink; this would be preferable where there are many windows, on account of the way the grey tint absorbs light and tones down the glass. Light shades of tan with a cream ceiling, or light blues or greens are also good and any of these may be made very attractive with a stenciled border of some harmonizing or contrasting color.

No piece of kitchen equipment is such a joy to the housewife as a deep, roomy built-in cupboard. The old-fashioned, homemade cupboard was made for a purpose and served it well, but the modern sideboard is only a makeshift. Painted the same as the wood-work, a built-in cupboard has an individual dignity, occupies no floor space and is as substantial as it looks. The cupboard should be placed convenient to the range and work table, and in addition an open shelf running along back of the range will be a convenience worth while to the cook. White oilcloth, cut to fit the shelves and work-table, and pasted or tacked securely will save hours of work work spent in changing paper covers.

Make Your Stove a Ventilator

A good stove is one of the most important pieces of kitchen equipment. The majority of farm houses have good stoves but during the hot weather these

are too often either moved out into a summer kitchen, or left standing polished and idle while a more or less dilapidated substitute does duty in the said cook-house. The trouble is that in many cases that necessitates the cook going up and down two or three steps, and walking the length of a useless kitchen possibly fifty times a day. If the kitchen proper could be built on, with a cellar underneath to make a dumb waiter possible, but with no upstairs above, then a hood could be made over the stove, with a flue opening through the roof. The hot air rising over the stove carries with it the odors of the cooking and the current of air set in motion makes an efficient ventilating and cooling system in hot weather. A coal oil stove, even if used only once or twice a day will easily pay for itself in a summer, and will save a great deal of work and heat in the house; while a fireless cooker, will do away with the necessity of keeping a fire going for hours to cook porridge, soup, beans, etc. A fireless cooker can be made on a crude scale at home by lining a box with asbestos, making an asbestos chamber inside to fit snugly around some covered kettle that you have, and filling around this chamber with hay or excelsior. The lid of the box must be tight fitting and well-lined with asbestos and hay, and of course the contents of the kettle must be actually boiling when put into the box.

If the woman of the house is to be saved work, the fuel should be convenient to the cook-stove, a very trifling thing this seems, but it is surprising how many women are carrying in wood from the yard, or coal from the cellar just as they need it. A covered wood-box placed against an outside wall with a door cut in the wall may be easily filled from outside, with wood or coal, without making any dust in the kitchen.

The Charm of the Old Oaken Bucket, a Fallacy

No farm house is complete without a kitchen sink. I don't believe any woman was ever yet inspired to sing wholeheartedly of "the old oaken bucket." Even before you have running water in the house, it costs only about three dollars for a kitchen pump, ten cents per foot for piping and six dollars for sink-trap and waste-pipe. If you have an iron sink, it may be enameled very easily, preventing dust and rust gathering. A common mistake in putting in a sink is to set it either too low or too high for the person who is to use it most. If she be on hand at the time it is an easy matter to get it just right, but a fairly good rule to follow is to have a sink three feet high for a woman five feet tall, varying to three feet six inches high for a woman five feet eight inches tall. There should be wide, grooved drain boards sloping slightly toward the sink, for dish-washing, cleaning vegetables, etc. A cupboard under the sink is not to be tolerated. In spite of the best efforts of the housekeeper it is likely to become a "catch-all" for rubbish and a breeding places for roaches.

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In buying kitchen utensils we do not as a rule pay enough attention to lightness. The old-fashioned iron kettles were back-breaking inventions, and except for deep frying, trying out fat, cooking pot roasts, etc., might well be done away with. The ideal kitchen ware is of aluminum, and while this is rather expensive to completely stock up with, it will pay in convenience and durability to replace each pece of worn-out graniteware with aluminum.

Things You Can Make at Home

There are a few valuable kitchen conveniences that can be made at home, like a dinner-wagon, for carrying food and dishes between the kitchen and dining-room and to use as a side table. A small table or stand with cleats fastened around the edges and castors put in the feet, is as good as the article sold in the furniture stores. Another kitchen help is a box painted like the woodwork with a close-fitting lid to hold the garbage pail. A garbage pail is almost a necessity in the farm kitchen and if left exposed even for a few minutes does a lot to encourage flies. The lid should be on hinges so as to be easily opened and closed.

A wire baking rack on which to turn out cakes, and bread to cool should be in every kitchen, but those found in stores are generally too small to be of much use. A good rack can be made by taking a good-sized piece of poultry netting and at each corner and in the middle of each side twisting a piece of stiff wire, to make six legs. These are just a few of the many contrivances which housekeepers have devised to make their kitchens more convenient.

Then, as we said before, the farm kitchen is more than a workshop, because there are often half-hours when some one of the family drops in to see how you are getting along and to have a look over the paper, and because there will often be little spaces in your work when you might rest yourself, the kitchen should have a broad level lounge and a few comfortable chairs—not the regulation little kitchen chair with the short upright back, but something light and strong and made to rest in. Then with a clock and an almanac your kitchen should begin to look like home.

Coburn of Kansas

Canadian agriculturists have known of F. D. Coburn, of Kansas, as one of the big men of America. His retirement from the secretaryship of the Kansas State Board of Agriculture attracts more than ordinary attention. As the pacemaker, inspirer, and friend of Kansas farmers, he has left his influence on agriculture everywhere. He was truly a big man. Senatorial honors could not win him from his chosen field. What he did for his State is monumented in the alfalfa acreage which grew from 91,000 to 1,000,000 acres under his inspiration. He likewise advocated sorghums for the Kansas farms and the result was a growth from a little over 500,000 acres to two and a quarter millions.

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Feeding a Prize Baby

A Practical Talk on Infants' and Children's Diets

By EVELYN ENDOW

Perhaps no branch of food study is of more concern to the average woman than the feeding of infants and children. In this article the facts and principles to consider in planning the diet of babies and growing children will be appreciated by every mother.—Editor.

To an infant, proper food means life itself and during the first year the foundation of health is laid. But the second and third year are of almost equal importance, while until one has all one's growth and all one's organs fully developed, food plays a very important part. Then in one's prime the physical and mental efficiency is more or less regulated by the quality and quantity of the food. Finally comes old age, the declining of years when one's diet must again be watched carefully and must change gradually back until one needs almost an infant's diet—not to build up a new body but to repair the old. To one who is interested in the composition of food stuffs, it is intensely interesting to study these relative quantities of foods needed.

A baby needs food to rapidly make new muscle and bone. He needs very little fuel food—enough to keep him warm and to give him energy to kick but the all-important thing is to make muscle and bone. For him milk is a perfect food. It possesses that all-important substance, proteid, which is absolutely needed for repairing and building in child and adult. It also contains milk sugar which is burned up for fuel but which also in children is quite necessary for building new flesh and bone. Both the sugar and fat, when taken in larger quantities than are needed for present use, are stored up as fat in the body. Then milk has also a large quantity of mineral matter to be used in the building. Iron is the only important mineral matter very lacking, but young animals are born with enough in their bodies for a time—babies having enough for about a year. This lack of iron is the cause of adults becoming anaemic who try to live on milk alone.

Gradually as a child learns to crawl and walk he needs more fuel foods to supply the energy but he still needs plenty of building material—milk being the chief source of this for some years, though gradually other things are added to the diet. Raw yolk of egg is one of the first sources outside of milk, of both proteid and fat and is of inestim-

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¶ The reason for this in almost every instance is because the cost of advertising has been equalized by a lower cost of production, due to the increased sales through the demand created by advertising.

¶ Take the case of a well-known brand of grape juice for instance. In the year 1897 the price paid per ton for grapes was $10; in 1910, the price per ton had increased to $43.50, and yet in face of this tremendous increase for grapes, the cost to the dealer was actually reduced. To-day $60 is paid by this firm for a ton of grapes, and the consumer is actually getting a better quality of grape juice at less cost than was paid in the year 1897, when grapes were only $10 per ton.

¶ But advertising has not only reduced costs, it has made possible higher standards of business. Advertising guarantees quality to the buyer. Advertised goods can be relied upon. No man can do business to-day and succeed if his products are not as represented. *Candor and Honesty* form the back-bone of modern advertising. It pays to buy advertised goods. Readers of Farmer's Magazine will find advertisements that appear in our columns are reliable and they will profit by answering these advertisements by writing for booklets, etc., that are offered for your convenience. When buying from your dealer see that you get the advertised goods that have guaranteed quality. Unknown goods of unknown value can be sold at profits that are far in excess to what they are legitimately entitled to. For your own protection buy advertised goods.

FARMER'S MAGAZINE

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able value in diets for rickety children. It supplies fat, proteid, and mineral matter in good quality and large quantity—the while of egg having only proteid and less valuable mineral matter. Well cooked cereals are also added about this time and from infancy onward play an important part in the source of building material. Oatmeal is also the cheapest source of proteid, and when well cooked agrees with most people, at least in winter—to some it is too heating for summer use. For children it can be made into biscuits and cookies, and in this form is a valuable addition to school lunches.

Meat is gradually added to the diet. Bacon is about the first added as the fat is so valuable and easily digested, but other pork is about the last meat added—chicken and rare beef coming after bacon.

By the time a child is five years old he needs half as much proteid and fat as a grown man, but only one-third as much carbohydrates. This term carbohydrates includes all starches and sugar—the fuel foods. When a boy is fifteen he needs as much of every kind of food as a grown man. When one realizes this, one sees how important is the diet during the school age. The taking of scanty cold midday meals should be avoided as much as possible. Where children must take their lunch to school it needs serious consideration to make it nourishing enough. Were it possible it should be commenced by some hot dishes, and how it is possible to supply this in our country schools is a problem which might be worked out by the Women's Institutes. It is quite worth their time and thought. In city schools it is being worked out very successfully in some places by a lunch counter—the articles being prepared by different classes of students supervised by the domestic science teacher—only simple things as milk, soup, and cocoa are usually attempted. One cannot estimate the results of instituting such a source of hot food. The warm food warms the digestive organs and stimulates the digestive juices besides giving nourishment. Where cold lunches cannot be avoided good warm suppers do much to counteract any harm. Milk and milk dishes are among the safest sources of proteid for the growing child, skim milk and buttermilk being equally important as whole milk as proteid sources after the first two or three years, as the fat which has been removed as cream can be gotten then in a much cheaper form.

A pound of dripping has just as much food value as a pound of butter, usually more, as butter has more water in it but butter is more easily digested as a rule as it is taken uncooked and cold and fat is harder to digest in cooked food. For this reason many philanthropic people are lamenting the Canadian strict law which prohibits the importing and selling of oleomargarine—the children of the poor suffer considerably as a rule from lack of fat in the diet and should be given fat in a cheaper form than butter and in a more attractive form than lard. A real charity would also be

given if one instituted a skim milk and buttermilk dairy, selling it at about half the price of the whole milk to supply poor children with a cheap source of proteid. Buttermilk, skim milk, and oatmeal rank together as the cheapest sources of proteid—other uncooked breakfast foods such as farina come next in the cheapness together with flour, potatoes and white bread. Bread, butter and milk together, or porridge and whole milk, make food dishes with all the ingredients in almost perfect proportion for small children. A very good supper dish for the small one, who has had cooked porridge in the the morning is one of the prepared breakfast foods with plenty of good milk.

Eggs are of very great value in any diet, but, at present prices, are a luxury. To the child or adult who needs building up their worth is great. If one can take whole eggs easily raw, tonics need not be considered. The easiest way is to break one in a small glass, add a few drops of lemon juice or vinegar and a sprinkle of salt and swallow. Other ways are to add the slightly-beaten egg to milk, lemonade, orangeade, warm (not hot) coffee and so on; to beat the egg stiff as possible and flavor with lemon juice, orange juice, or vanilla together with a little sugar; to incorporate the raw egg in a milk pudding after it has been cooked. When there is a great aversion to raw egg it is safer to use only the white in these dishes, as it has less flavor and need not be detected. A case is recited where a person, on the verge of a breakdown, recovered without giving up a day of her strenuous work by taking six or seven raw eggs a day, together with as much other food as she could persuade herself to eat. She commenced the day with a large egg-nog made with two eggs, which she supplied with crisp toast. A glass of milk with every meal is an easy way of adding a lot of building material to the diet.

And what about cheese and beans and peas as proteid sources? All are valuable if well cooked, and are a very cheap source. The cheese is much better if finely divided by other foods as macaroni or bread crumbs—also to be easily digested it should be cooked at a low temperature and a little soda added to the dish to make the cheese more soluble. For a person who has difficulty in digesting beans and peas it is better to cook them well and remove the skins by putting through a coarse sieve. This forms an excellent foundation for a milk soup. Beans baked six and eight hours lose much of their indigestibility, and split peas, though more expensive, are simpler to cook.

The most serious objection to candy for children is that it is usually eaten on an empty stomach, in town the sweet-shop being usually visited on the way home from school. This means that the concentrated sugar burns the lining of the stomach. Also taken then it spoils the appetite for a hearty plain meal. Taken at the end of a meal, it makes a good fuel food, and is an easy thing to carry for school lunches if the child

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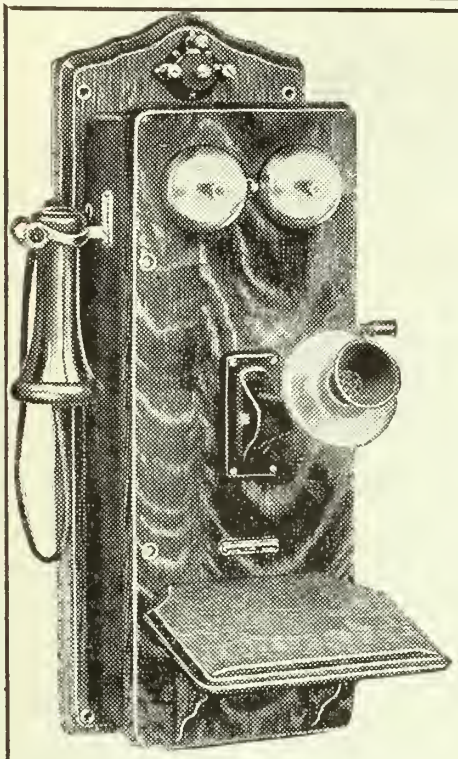

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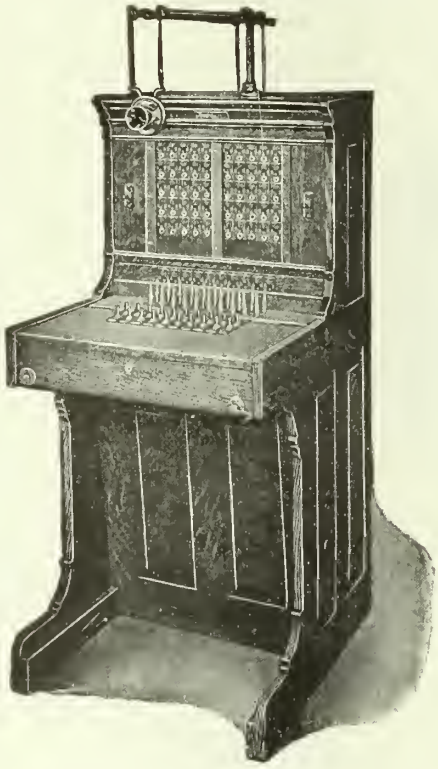

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has enough will power to leave it until the last.

To sum up, remember what a great deal of proteid and fat a growing child needs to build a good strong body. Lack of proteid and fat not only means lack of general growth, but means stunted organs which are developing, and until one is about twenty there are still organs developing. There is very little danger of their eating too much if they only get good plain foods, among which should always be found milk, soups, well-cooked cereals, and milk puddings. These with plenty of sleep and reasonable exercise cannot but make healthy children, capable of coping with the many problems in later life.

Spraying Maxims for San Jose Scale

Do not spray when the trees are wet; this weakens the wash.

Do not spray just before a rain, because the rain will rapidly wash the mixture off unless it has first become thoroughly dry.

Do not spray when the thermometer is at or below freezing point. The mixture does not seem to get into contact with the insects so well as in warm weather.

If possible start soon enough to finish by the time the buds are bursting. If not through then and the scale is abundant, spray ahead at the regular strength until all the trees are done. Often no damage to leaves will follow; in any case the spray will do less injury than the scale.

Test the strength of the lime-sulphur with a hydrometer; it is the only business-like way where concentrated lime-sulphur is used.

Take advantage of the wind. A strong wind is often helpful, especially for large trees.

Do not be stingy with the material. Cover every inch from the base of the trunk to the topmost twig. Remember a single female missed may mean 1,000,000 by the end of the season. It may take eight gallons or more for a large tree, but only thoroughness will pay.

A good gasoline outfit is very much quicker and more satisfactory than a hand pump for large, old orchards, but good work can be done with a hand pump, too.

Keep the spray machine in good repair, pump clean water through it every night, and take off the nozzles to prevent their getting set. It will save much loss of time. A circular piece of leather three inches in diameter placed at the base of the nozzles will largely prevent the mixture running down the rod and wetting the hands.

Use gloves to save the hands.

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Can You Make Croquettes?

Some Attractive Ways of Using Up Left Overs and Tidbits

By JEAN MacKENZIE

If you have felt that it requires a great deal of skill and time to make croquettes, just read this article and try them. They make the most attractive and palatable of supper dishes and may be made one of the most nourishing. The possibilities of using up leftovers in this way will appeal to the economical housewife and once she gets into the croquette swing, she will find herself working out original ideas better suited to her particular case than many of the recipes found in cook books. —Editor.

SOME WISE authority has said that the final test of a good cook is in the making of croquettes. Certain it is that there is nothing more objectionable than a soggy, greasy croquette. They are easy to make successfully if certain simple rules are followed carefully, but neglect these, and the results will not be all one could desire. Remember you cannot make them in a hurry, the longest way around is the shortest in the end. In fact, it is the only way. It requires only a few minutes in the morning to make the sauce and prepare the other ingredients, a few at noon to shape the croquettes, and a few at night to fry them, or they may be mixed and set to cool the day before, if wanted by lunch time, and moulded and fried the next morning. The white sauce used must be much thicker than the one you use ordinarily. Do not try to cook them in a frying pan, that makes them of an uneven color, and flat on one side, always use a frying basket with fat deep enough to cover the croquettes. Do not let them remain long in the fat, as all the ingredients are already cooked, and only require to be browned. Be very careful to have the outside completely covered with egg, before crumbling, and that there is no moisture on the surface, as this causes the hot fat to splash. Above all, be sure that the croquette mixture is perfectly cold, before attempting to mould them.

Croquettes may be either sweet or savoury. Some of the most popular ingredients for the savoury ones are,—veal, lamb, beef, chicken, fish, oysters, lobsters and cheese and tomatoes. When meat or fish is used, chop very fine, and remove all string, gristle or fat. To each cup of meat take one-half cup thick white sauce. Mix and season, then put on to a cold platter, and set away for two hours to get perfectly cold. When cold and firm, cut in pieces, and mould in desired size and shape. Crumb, then egg and crumb, and set away again for two hours.

To "Egg and Crumb"

With each egg used blend a tablespoon cold water. Take the crumbs on a moulding board. The food to be fried

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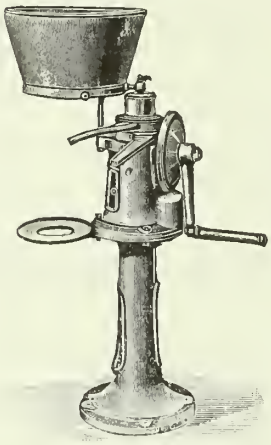

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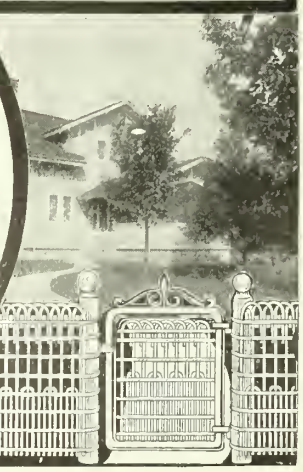

should be first rolled in crumbs (be careful that all parts are covered) then dipped in the egg (again care must be taken to cover all parts, then rolled in crumbs again. After the last crumbing remove croquettes to a board where there are no crumbs, and shake off some of the outer ones, then set away again.

To Test the Fat

Put a cube of stale bread, an inch square, into the fat. It should turn a delicate brown in forty seconds.

Frying

Place two or three at a time in the frying basket, don't let them touch, and plunge in deep hot fat till they turn a nice brown. Drain on crumpled brown paper, and leave in the oven, with the door open until all are fried. Don't cook too many at once, as too much cold material at one time reduces the heat of the fat very quickly. When all are done, arrange on folded napkin on a hot platter, garnish with lemon quarters, and parsley, and serve at once.

Thick White Sauce for Croquettes

2½ tablespoons butter
1-3 cup flour
1 cup milk
¼ teaspoon salt
Few grains pepper

Put butter in saucepan, stir until melted and bubbling, add flour mixed with seasoning and stir until thoroughly blended. Pour on the milk gradually, about a third at a time, stirring until mixed, then beat until smooth and glossy.

Potato Croquettes

Heat one cup mashed potato, and add a tablespoonful of hot milk; beat very light and season with pepper, celery salt, and half a teaspoon chopped parsley. Set away to cool, then mould, egg and crumb, and fry. Serve with roast chicken or any other meat, or have for a main course at luncheon or supper. A beaten egg added to the potato improves it greatly.

Salmon Croquettes

1¾ cups cold, flaked salmon
1 cup thick white sauce
1 teaspoon lemon juice
Few grains cayenne
Salt

Add salt, pepper, and lemon juice to salmon, then add sauce. Spread on a plate to cool. Shape, dip in crumbs, egg and crumbs again, cool again, fry in deep fat, and drain.

Lamb Croquettes

1 tablespoon finely chopped onion, salt and pepper
2 tablespoons butter
¼ cup flour
1 cup stock
1 cup cold, cooked lamb, cut in small cubes
2-3 cup boiled potato cubes
1 teaspoon parsley, finely chopped

Fry onions in butter five minutes, then remove onion. To butter add flour and stock, and cook two minutes. Add meat, potato, salt, and pepper. Simmer till meat and potato have absorbed sauce.

Add parsley, and spread on a shallow dish to cool. Shape, dip in crumbs, egg and crumbs again, fry in deep fat, and drain. Serve with tomato sauce.

Veal Croquettes

2 cups chopped cold, cooked veal
½ teaspoon salt
⅛ teaspoon pepper
Few grains cayenne
Few drops onion juice
Yolk 1 egg
1 cup thick white sauce, made of white stock

Mix ingredients in order given. Cool, shape, crumb, and fry same as other croquettes.

Chicken Croquettes

1¾ cups cold, cooked fowl, chopped
½ teaspoon salt
¼ teaspoon celery salt
Few grains cayenne
1 tablespoon lemon juice
Few drops onion juice
1 teaspoon parsley (chopped)
1 cup thick white sauce

Mix ingredients in order given. Cool, shape, crumb, and fry as other croquettes.

Chicken and Mushroom Croquettes

Make as chicken croquettes, using 1 1-3 cups chicken meat, and 2-3 cup chopped mushrooms.

Cheese Croquettes

3 tablespoons butter
¼ cup flour
2-3 cup milk
Yolks 2 eggs
1 cup mild cheese, in small cubes
½ cup cheese, grated
Salt and pepper
Few grains cayenne

Make a thick white sauce, using butter, flour and milk, add yolks of eggs without first beating, and stir until well mixed; then add grated cheese. As soon as cheese melts, remove from fire, fold in cheese cubes, and season with salt, pepper and cayenne. Spread in a shallow pan, and cool. Turn on a board, cut in small squares or strips, dip in crumbs, egg and crumb again, fry in deep fat, and drain on crumpled brown paper.

Beef and Rice Croquettes

1 cup chopped beef (from top of round)
1-3 cup rice
½ teaspoon salt
¼ teaspoon pepper
Few grains cayenne
Cabbage
Tomato sauce

Mix beef and rice, add salt, pepper, and cayenne. Cook cabbage leaves two minutes in boiling water to cover. In each leaf put two tablespoons mixture, and fold leaf to enclose it. Cook one hour in tomato sauce.

Tomato Sauce

Brown 4 tablespoons butter, add 5 tablespoons flour, and pour on gradually 1½ cups each brown stock and stewed and strained tomatoes. Add 1 slice onion, 1 slice carrot, a bit of bay leaf, a sprig of parsley, 4 cloves, ¾ teaspoon salt, ¼ teaspoon pepper, and a few

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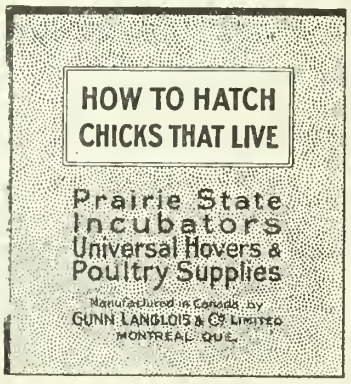

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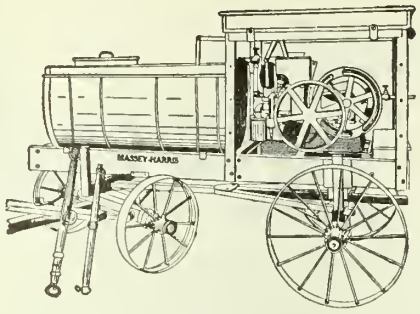

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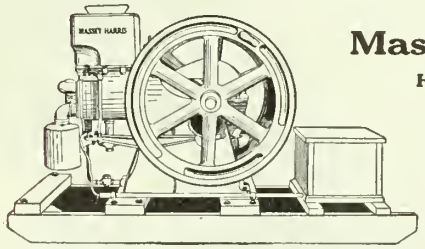

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grains cayenne. Cook ten minutes and strain.

Rice Croquettes with Jelly

½ cup rice
½ cup boiling water
1 cup scalded milk
½ teaspoon salt
Yolks 2 eggs
1 tablespoon butter

Wash rice, add to water with salt, cover, and steam until rice has absorbed water. Then add milk, stir lightly with a fork, cover and steam until rice is soft. Remove from fire, add egg-yolks and butter, spread on a shallow plate to cool. Shape in balls, roll in crumbs, then shape in the form of nests. Dip in egg, again in crumbs, fry in deep fat and drain. Put a cube of jelly in each croquette. Arrange on a folded napkin, and garnish with parsley.

Sweet Rice Croquettes

To rice croquette mixture, add 2 tablespoons powdered sugar, and grated rind of ½ lemon. Shape in cylinder forms, dip in crumbs, egg and crumb again, fry in deep fat and drain.

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Two common systems are used for igniting the gas in the combustion chamber, namely: the jump spark, and the make-and-break. The speed of the engine in most cases determines the system used; that is, on high speed engines the jump spark is used, as with this system there is no moving mechanism to operate, while on low speed engines and engines using fuel heavier than gasoline, the make-and-break is most practical. With this system, only low tension electric currents are used and with the proper coil and igniter it is found to give a better spark.

Spanish Gold

(Continued from Page 32.)

what your father used to give. It's most fortunate my meeting you in this way. I'll explain the situation to you in a moment. When the Church of Ireland ceased to be established by law—Gladstone, you know, I think it was in 1869——"

"I'm not going to subscribe one penny to your church," said Giles. "I haven't any money, and if I had I wouldn't give a solitary shilling towards paying a fellow like you."

"Well, anyhow it can do you no harm to understand how we're situated. Under the Act of Disestablishment the existing clergy——"

"Damn it!" said Sir Giles.

Then he pulled vigorously at the rope which was still round his armpits and shouted, "Langton, Langton, haul up, will you? Have you gone to sleep? Haul up, I tell you. Not too quick. Do you want to knock my brains out?"

He swung slowly up, clinging with both hands to the rope above his head and pushing himself off the face of the cliff with his feet. Meldon, with a broad grin on his face, watched him reach the top, and then turned and swam back to the rock where the Major waited.

"I say, Major," he gasped, "those fellows aren't Members of Parliament after all, and the treasure is certainly in that hole."

"I could see you standing up to your middle in water talking to a man. I couldn't hear a word you said, of course. Who is he?"

"He's Sir Giles Buckley, and that's why I say the treasure is certainly in that hole."

"I don't," said the Major, "precisely see how the one thing follows from the other."

Meldon climbed out of the water and began to rub himself briskly with his towel.

"You wouldn't," he said, "but it does follow. Nothing could follow more plainly. It's like a beastly syllogism. Here's a man—two men, in fact—who have no earthly business in Inishgowlan. It's impossible even to invent a motive for their coming here now that we know they're not Members of Parliament. Very well. They're here all the same, and one of them risks his life on a rotten rope to get down the face of a cliff to a certain hole at the bottom of it. What would he do that for?"

Meldon paused.

"I don't quite see yet," said the Major, "how you prove that there is treasure in that hole."

"Very well, I'll start at the thing from the other direction. Hitherto i've been proceeding on what's called the inductive method of reasoning. Bacon, you know, was the man who invented that. Now I'll try deduction. Who else besides ourselves knows about that treasure?"

"We don't know. At least I don't. You're trying to prove the treasure to

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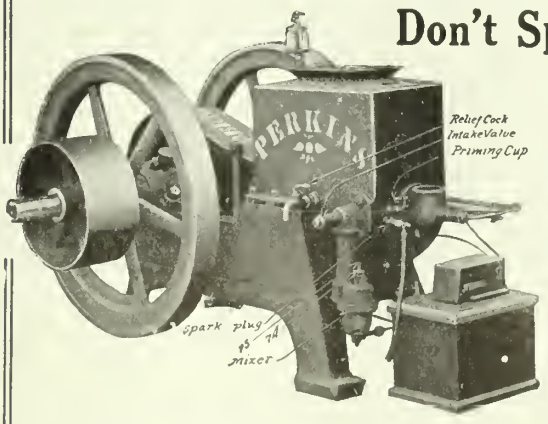

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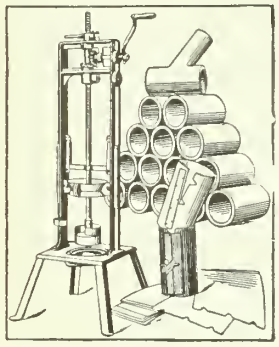

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me at present by some method or other."

"Major, at times you make a saint go near swearing. Have I got to go through the whole story of the wreck of that Spanish galleon again? If you don't trust me you might at least believe your own grandfather. He said the treasure was here. Now, who else knew about it? Old Sir Giles Buckley did. Now, assume that he wrote down what he knew, just as your grandfather did. There's nothing more likely. His son never reads the paper any more than your father did. But you read your grandfather's diary after the death of the late Sir Giles. You follow me so far?"

"I follow you all right, but why don't you put on your clothes? I'd have thought you'd have had enough of standing about in your skin for one day."

"I'm not going to dress yet," said Meldon. "I may have to swim down the channel again at any moment. Suppose Sir Giles takes it into his head to drop over the cliff the minute he thinks that my back is turned. I can't afford to let him nip into the hole by himself."

"Do you mean to stand there stark naked day and night until Sir Giles chooses to leave the island?"

"No, I don't. In another hour the tide will have risen, so that nobody can get into the hole. The mouth of it will be covered and the whole thing full of water inside. Hullo! There's Sir Giles and Langton with him sitting on the cliff opposite us just where old T. O. P. sat yesterday. They're watching us. Very well, let them watch. I'll dress."

"You may as well for all the good you're likely to get out of that hole."

"Just you wait," said Meldon, "till I get into my shirt and trousers and I'll explain to you."

"Now, where was I? Oh, yes! Sir Giles Buckley dies. His son, that playboy sitting on the cliff opposite, gets next to nothing out of the property, but he collars some family papers. He reads them. He sees, just as I saw, just as any man with a glimmer of intelligence would see, that he's got a soft thing in this treasure. He doesn't care about being recognized in Ballymoy, where he very likely owes money, so he sends a friend to hire a boat for him. He gets my boat and off he comes."

"I don't see that you've proved anything," said the Major, "except that there's one other ass in the world as giddy as yourself."

"Unpack the luncheon," said Meldon. "Your temper will improve while you eat. There's just one thing left which puzzles me."

"I shouldn't have supposed that there was anything in the world that could puzzle you."

"Well, there aren't many things," said Meldon frankly. "In fact, I've not yet come across anything which regularly defeated me when I gave my mind to it, but I don't mind owning up that just for the moment I'm bothered over one point in this business. How did Buckley know about the hole in the cliff? How did he locate the exact spot where the treasure lies? He does know, for he walked straight up to it without hesita-

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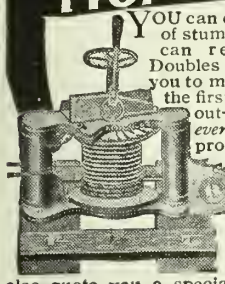

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tion. The minute he landed yesterday he went up to the top of that cliff. I thought that he was just a simple Member of Parliament looking for a view, but I was wrong. He was prospecting about for the best way of getting at that hole. Now, how did he know? We only arrived at it by a process of exhaustive reasoning based on a careful examination of the locality. He walks straight up to it as if he'd known all along exactly where to go."

"Perhaps he reasoned it out before he started."

"He couldn't. No man on earth could. I couldn't have done it by myself. It wasn't till I got to the spot that I was able to reconstruct the shipwreck and track the working of the Spanish captain's mind. That disposes of your first suggestion. Got another?"

"Perhaps his grandfather knew the spot and made a note of it."

"Won't wash either. We know that his grandfather couldn't find the treasure any more than yours could. If he'd known about that hole in the cliff he would have found the treasure."

"Always supposing it's there," said the Major.

Meldon glared at him.

"If it's there! Major, you're the Apostle Thomas and the Jew Apella and the modern scientific man rolled into one for invincible sceptisism. Is it possible to convince you of anything? Tell me that."

For a time they ate in silence. Now and then Meldon glanced at the cliff opposite to assure himself that Sir Giles and Langton were still there. At last he said —

"It appears to me that Langton must be mixed up in the business somehow. Why did Sir Giles bring him? He isn't any good at sailing the boat. He doesn't look as if he'd be much good for anything. Depend upon it, he must have given the tip about the hole, but how he comes to be in the know I don't precisely see. However, one thing is pretty clear, We've got to keep a very sharp eye on those two gentlemen opposite."

"Unless you mean to sit here day and night," said the Major, "I don't see how you're going to do it."

"I told you before that you can only get into that hole from about three-quarters low water to a quarter flood. Buckley knows that too, for he's seen the place. He won't come here at high tide nor yet at half tide. What we've got to do is to watch him at the other times. That gives us a chance to eat and sleep."

"I expect he'll watch you, too. That is to say, if he's really after the treasure."

"Let him. I'll back myself to get the better of any man living at a game of hide-and-seek. Don't you worry yourself about his watching us, Major. I'll arrange a plan for circumventing him. Look at the way I've diddled Higginbotham and old Thomas O'Flaherty Pat and Mary Kate. What's to stop me dealing with Buckley on similar lines?"

Half an hour later, having finished their luncheon and smoked their pipes,

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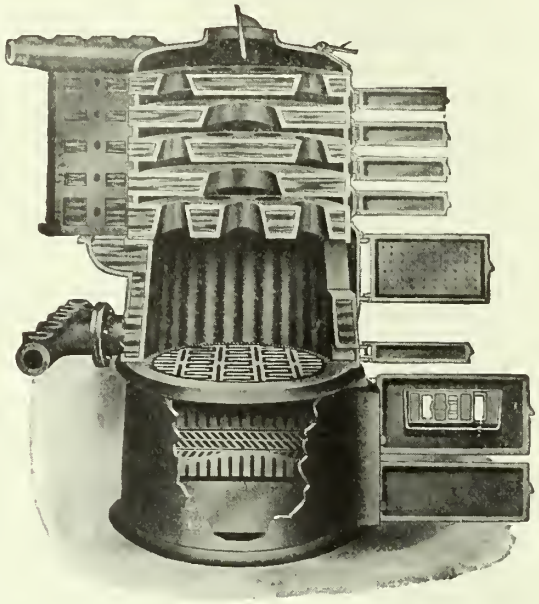
THE "flues" in a hot water boiler are the series of little chimneys in the Boiler Sections through which the smoke and heat fumes pass from the fire on the way to the chimney of the house.



These little chimneys inside a boiler bring the fire into contact with the heating medium. They draw off the heat that ascends through them and leave the waste smoke and gas to escape up the big chimney into the open air.

The "flues" are the most important part of a boiler.

The 1913-1914 Model "Sovereign" Hot Water Boiler introduces an improvement in flue construction and arrangement. They are made wider, have sloping walls—flared or bell-mouthed—and they are arranged to one side of each other, so that while a clear draft is afforded, the heat fumes zig-zag between the sections and play against a larger area of heat-producing surface.

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PARSONS & PARSONS CANADIAN CO.
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Major Kent and Meldon started to scramble back. The tide had risen sufficiently to prevent any one not an experienced diver from getting into the hole. As they neared the pier they saw Sir Giles Buckley and his friend Langton rowing off to the Aureole in their punt.

"That's all right," said Meldon. "Now we can take it easy and think things over till to-morrow morning. They won't attempt to get down that cliff in the dark. Hullo! Here's Higginbotham coming out of his tin wigwam to meet us. Do you know, I think Higginbotham is becoming rather a nuisance. I'm beginning to feel that I could get on nicely without Higginbotham. I wonder if we could get rid of him off the island anyhow?"

"Unless you cut his throat and sink the body," said the Major, "I don't see how you can."

"I'd be sorry to do that. I've rather a liking for Higginbotham, though he is a bit of an ass. He used to come out with me sometimes of a Sunday afternoon when I was going to see my little girl in Rathmines. He used to talk to the mother on those occasions and I've always had a feeling of gratitude to him ever since. No; Higginbotham's a nuisance, but I wouldn't wish him any bodily harm. I won't agree to your cutting his throat, Major, so drop the idea. Besides, you never can tell but he might come in useful to us in some way. He's done us no harm so far, thanks to the way I've managed him. Hullo, Higginbotham! How did you get on with the old boy about the house this morning?"

"That's what I wanted to talk to you about," said Higginbotham. "There was some sort of misunderstanding."

"Do you tell me that? Well, now, I'm greatly surprised. I thought I'd left everything coiled down clear for running so that there couldn't have been a hitch. Tell me now, Higginbotham, you didn't try to revenge yourself in any way on Mary Kate, did you?"

"Mary Kate! Oh, is she the little girl who came about the sugar candy?"

"Don't hark back to that sugar candy. I've told you before, Higginbotham, that the Major and I aren't going into the sugar-candy row either on one side or the other. We're dead-sick of the whole subject. You've gone and botched a perfectly simple business with dear old Thomas O'Flaherty Pat. I don't know what you've done exactly, but I strongly suspect that you've made yourself offensive in some way about Mary Kate. Why can't you leave that child alone?"

"I didn't do anything to her," said Higginbotham. "I didn't even remember that she was the same child. But what between nobody except the old man being able to speak Irish and him not being able to speak anything else——"

(To be continued.)

Use of Dynamite In Agriculture

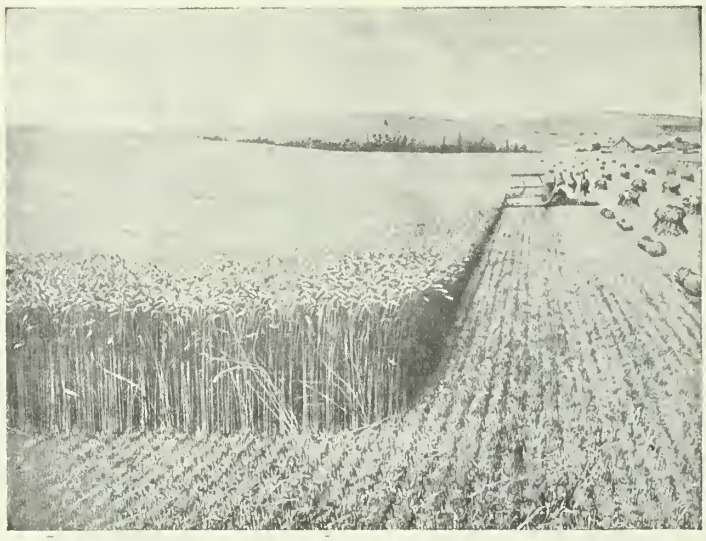
DYNAMITE has such a wide range of uses on the farm—in the orchard, the truck garden, the swamp lands, in fact, almost anywhere—that it is surprising so few agriculturists and orchardists have taken advantage of its use. Agricultural dynamite is manufactured so as to be comparatively harmless until it is exploded by a fulminate cap and fuse. It contains only from 25 per cent. to 40 per cent. of nitroglycerine, the remainder being merely filler, usually a kind of absorbent earth used to give consistency to, and to weaken the strength of the actual explosive.

On account of long-continued cultivation, many fields, truck gardens, and orchards are underlain by a plow sole, which is practically as impervious to moisture and as impenetrable by the roots of growing vegetation, as hard pan. Often an attempt is made to break up this plow sole by means of subsoil plowing. Such fields must be heavily fertilized every year and much needless expense for cultivation is also entailed by reason of the stratum of hard-packed soil. The rain penetrates this with difficulty; the upper soil, soon saturated, permits a rapid run-off; the field washes badly, and much of the heavily fertilized top-soil is lost by erosion. Further, any continued dry weather works havoc with the crops. A few charges of dynamite, placed at a depth of four or five feet, and scattered at regular intervals over such a field, will break up this plow sole, and tend to convert the hard, impervious subsoil into a porous reservoir for the storage of moisture, which is later drawn up by the upper soil's capillarity and becomes available for plants.

The cost of subsoiling—that is, the average cost per acre, which will be found generally applicable—will run from six to twelve dollars, according to the quantity of explosive used and the cost of labor. A fair average on difficult soil would be about this: Charges placed a distance of fifteen feet apart each way would require about 194 holes per acre, these holes being three feet deep, a half-stick of from 20 to 25 per cent. dynamite to each hole would require 49 pounds of the explosive, 194 caps, and 582 feet of fuse. Less difficult soil conditions, requiring fewer charges and consequently a smaller total quantity of explosive, will, of course, cost much less to treat. The cost of subsoiling, which is by no means heavy becomes still less important in view of the duration of its effects.

Hundreds of farms have low, wet spots which should be drained and, which, if drained would be highly productive. With dynamite the work of ditching becomes play, a sort of firecracker celebration. It should be done when the temperature of the water is above fifty degrees as a high-power dynamite is used in ditching, and a low temperature interferes with its effectiveness. Ditches excavated with dyna-

PROSPERITY and WASTE



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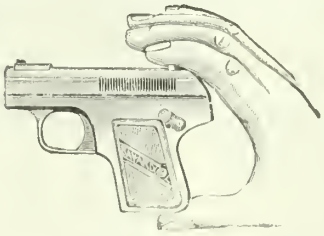
THE LITTLE GIANTS

The **BAYARD** Pistols have been designed to meet the demand for Pocket Pistols, combining easiness of manipulation and simplicity of construction with maximum efficiency.

In size, they are no larger than most .25 cal. Pistols, although they shoot the powerful .32 and .380 cal. Cartridges.



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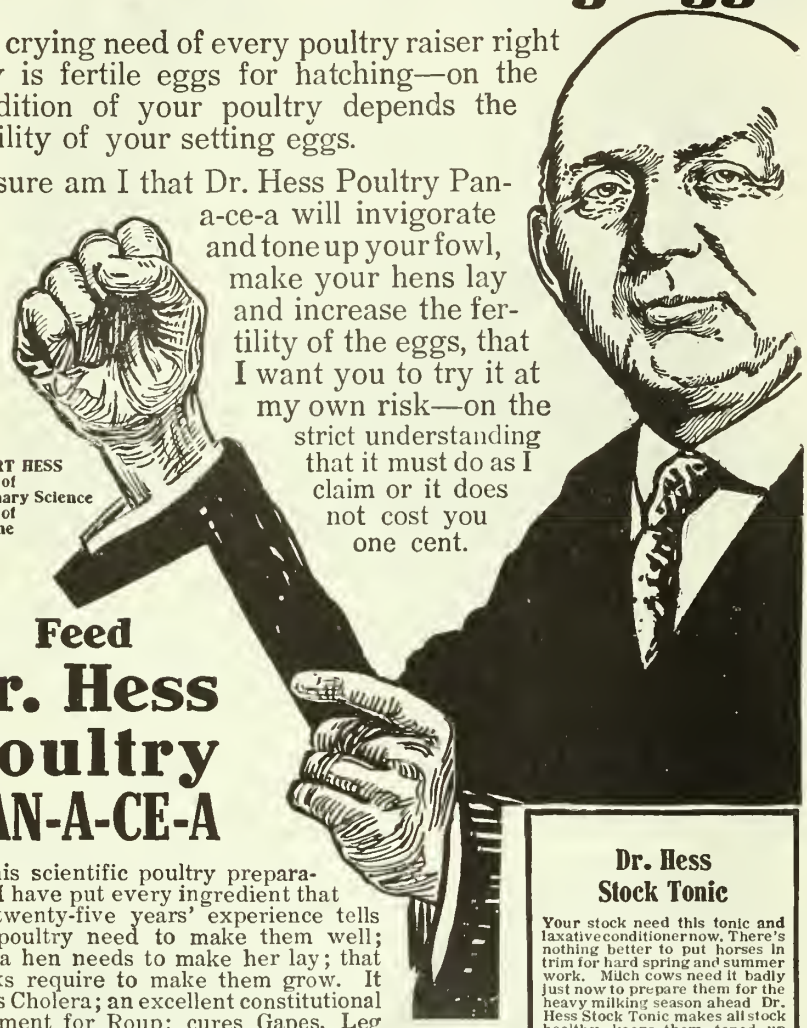

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Write for my new poultry book today—it's free.

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Kills lice on poultry and all farm stock. Dust the hens and chicks with it, sprinkle it on the roosts, in the cracks, or, if kept in the dust bath, the hens will distribute it. Also destroys bugs on cucumber, squash and melon vines, cabbage worms, etc., slugs on rose bushes, etc. Comes in handy sifting-top cans, 1 lb. 35c; 3 lbs. 85c (duty paid). I guarantee it.

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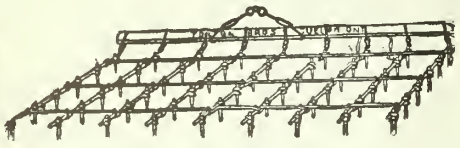

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with an unequalled record. Pre-eminently the most efficient, strongest and most durable Harrow manufactured. **We absolutely guarantee this.**

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mite are cleaned out as well as if the work were done by a spade or scraper, and if done on a windy day the earth displaced is well scattered over the adjoining land.

A quarter of a stick, or even less, of 40 per cent. dynamite in each hole will blow post holes much more rapidly than they can be dug, even by an expert digger. A cesspool is a necessity on any farm in these days, but to dig a cesspool with pick and spade is back-breaking work. Holes bored in a circle along the outer circumference of the proposed pool, from five to six feet deep, and charged with two or three cartridges of 20 or 25 per cent. dynamite will excavate the pool and leave it in such shape that practically no shovel work will be required. Cellars may be excavated in the same way, while boulders too heavy to be moved may be broken up into pieces easily handled by the use of 50 or 60 per cent. dynamite.

How Much Machinery For 50 Acres?

(Continued from page 28.)

farms—a six-year rotation of turnips, peas and oats, hay, hay pasture, and pasture ploughed in late summer for turnips the following year, the machinery necessary for work on this farm would be the usual plough, harrows, etc., and in addition a horse seed drill. Outside labor would probably be needed not only for drawing in the grain and hay, but for hoeing the turnips once. With proper care and good management 50 to 75 breeding ewes should be kept on such a farm.

There may be a difference of opinion about owning and using a fanning-mill on a farm where all the grain is fed; but one does not like to feed dirty grain. If the threshing machine cleans the grain thoroughly a fanning-mill may not be needed. A cream separator is needed on a dairy farm, but not on a farm devoted exclusively to beef cattle or to sheep. A root-pulper is needed on a sheep farm where large quantities of turnips are fed. It may be an advantage to have a gasoline engine to pump water, run the cutting-box or root-pulper. If butter is made at home the engine should be used to separate the milk and cream and do the churning. A windmill will pump water cheaply; but in a country of strong winds the wind-mill is not reliable, while the cost of repairs soon makes it expensive to maintain. On a dairy farm a balance scale for weighing milk, and a small Babcock tester are more important than a cream separator.

Perhaps the best answer to make to the question, How much machinery for 50 acres? is this: plan a rotation of crops that will distribute the labor as well as possible through the season; follow a rotation that not only economizes labor but maintains the fertility of the soil and produces the maximum

of fodder and grain for live stock; purchase only such implements as are necessary and best suited for the different kinds of work for which they are intended; buy no implement or tool that does not earn a tenth of its value every year; see that every implement is under cover, is kept clean and well cared for when not in use; reduce hand work to a minimum and make the horses and machinery do everything you can, but do not buy machines merely to get rid of a machine agent. Every farmer, no matter what the size of his holding should have a small repair shop on his farm, with forge, anvil, vise, drill, files, saws, bits, paint brushes, etc. A small blacksmith's outfit and a set of carpenter's tools with an assortment of iron, bolts, rivets, nuts, washers, etc., and lumber of different kinds—would not cost much, probably not more than $50 and yet would save its value to the farmer every year. The oil used on farm implements, exposed to rust and the cutting power of dust, should have air-floated graphite mixed with it. All the bright and wearing surfaces of tools should be clean when they are put away and if some graphite and oil or grease mixed with graphite were rubbed over the surface there would be no rust. The machines should be painted from time to time. This can be done on mild days during the winter season. If implements are properly cared for and carefully used they will last for many years. If they are not well used they become the heaviest kind of a tax on the farmer.

If the farm work is carefully thought out in advance and the whole business of the farm reduced to a system there is no need for the employment of outside help on a 50-acre farm except for such work as drawing in hay or grain, unless it be for some special work that gets behind. If one should be running a 50-acre fruit or vegetable farm, then a force of laborers must be employed. On the well-managed live stock farm this is not the case. When a farmer can hire machine work done cheaper than he can maintain the machines he should not hesitate to pay out the money. The only difficulty usually experienced in hiring grain cutting or mowing hay, is in getting the work done at the right time. If farm work is not done when weather and other conditions are just right then it is usual for a loss to occur.

It is a good plan for two farmers living side by side, who have farms of the same size and run on the same system, to buy certain implements and tools between them and to exchange work in handling hay and grain. Sometimes three or four 50-acre farmers buy together a mower, a binder, a manure-spreader, a side-delivery rake, a hay tedder, a grain drill and a corn-harvester. These are expensive implements and can be owned and used by three or four men as well as by one. They exchange work in the same way and all get their work done on time. Such a simple system of neighborly co-operation is practical and economical when each man is prepared to do all that is right and fair.

Every Cent This Engine Costs Is Paid Back Ten Times Over

A hired man is expensive. He eats heartily; sometimes gets sick, and often gets tired. His wages make a good-sized hole in the farm profits, too. Besides, it is almost impossible to get one who is steady, a good worker, economical and desirable about the house. Figure the cost of a hired man, then figure how much you would be willing to pay for an engine which will work all day and never tire, draws no wages, goes when you want it to, and never stops till you want it to, and does ten times the work, and does it better. You say "Yes, but there are so many Gasolene Engines. How shall I choose?" Very sensible question. Look at it this way. An engine is valued by the work it will do and by the economy of its operation. On both points we recommend the Chapman Gasolene Engine. Our mechanical expert has designed a masterpiece of simplicity and a triumph in the production of maximum power, easy running, easy repairing and low cost. This engine will save DOLLARS every month in cost comparison with any other similar engine. Hundreds of enthusiastic users of the Chapman Engine have written us of their great satisfaction. You need one to do the following things on your farm:

Saw Wood, Chop Wood, Chop Feed, Pump Water for Cattle, Horses and for Wash Day, and for Garden use in dry weather; furnish Cheap Power for Fanning Mill, Separator, Churn, Tool Shop, etc. No farm nowadays is a properly equipped farm without a first-class engine.

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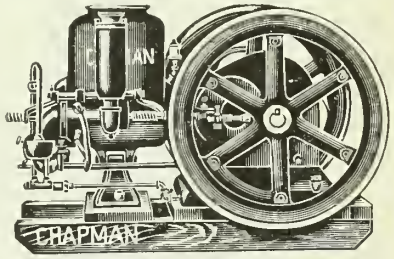

This engine has a record for efficiency. A special feature is the convenient "Cam Box," containing the working parts; it is easy of access and removed in a few moments without touching any other part. The small size of the "Cam Box" enables it to be easily handled or shipped at very slight expense. This feature alone is sufficient to make it unequalled.

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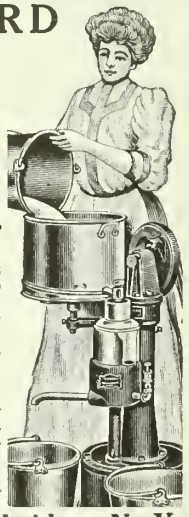

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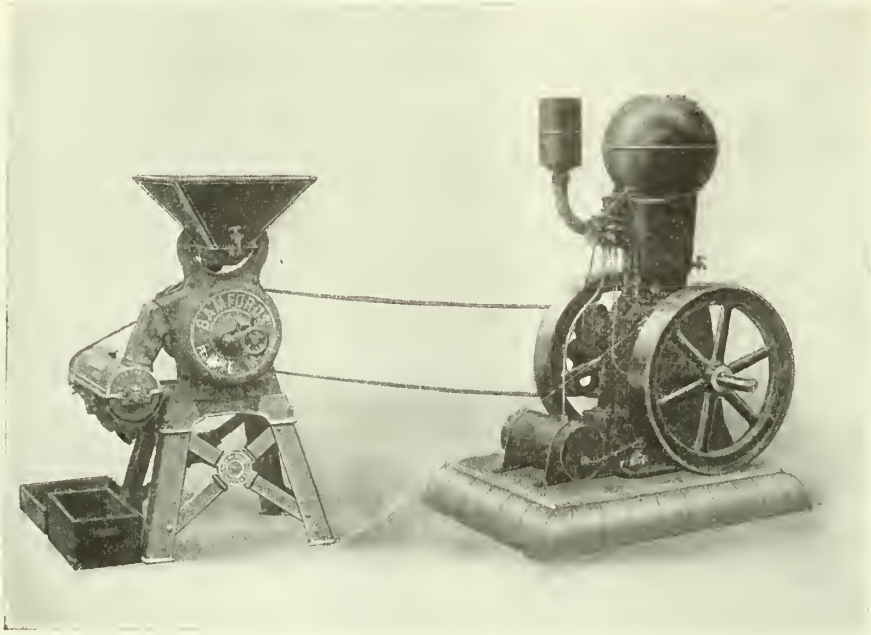

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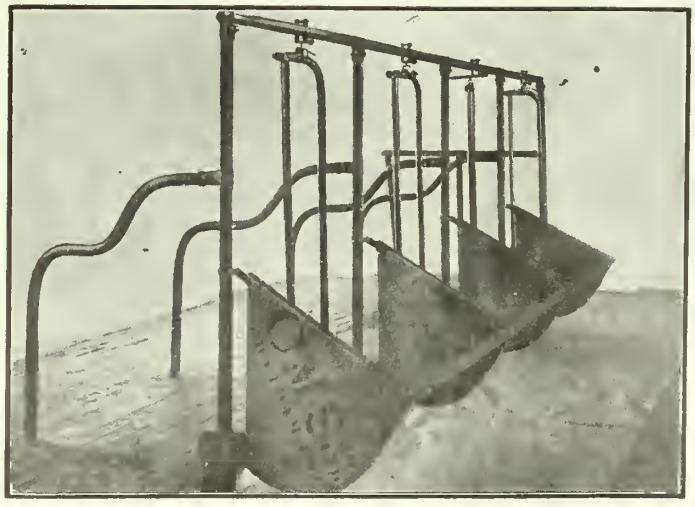

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Hot Beds

Even an Amateur Need Have Little Trouble in Growing Early Vegetables

By E. J. FARRINGTON

By the use of hot-beds and even unheated garden frames, it is possible to have many vegetables and flowers which otherwise could not be grown where seasons are comparatively short. A hot-bed is not difficult to make and can be used to start hundreds of young plants. Standard hot-bed sash are 3 x 6 feet. They may be bought glazed or without the glass and cost from $2 to $4 apiece, according to the quality. If one must send away for sash, it is better to buy them unglazed and to purchase the glass near home. When setting the glass, it is customary to lap it like shingles on a roof, in order that it may shed water more easily. There is a kind of putty called Mastica which is best to use for glazing hot-bed sash because it hardens very quickly. Glazing points are necessary also, for the glass must be very tight.

When ordinary sash are used, it is necessary to have board shutters as well as mats of some kind. The shutters may be placed on the bed at the approach of a snow-storm, as it is much easier to remove the boards with their covering of snow than to clean the snow from the glass. The mats, which may be old rugs or pieces of carpet, are to be used when the temperature runs especially low.

Double glass sash now on the market cost more than the other kind, but are particularly useful because they do away with the necessity of using additional coverings except in the dead of winter. The air space in these sash help to increase the protection they give Naturally these double glass sash are heavier than the other kind, and many people like to use what are termed "pony" sash. They are just half the size of the ordinary 3x6 sash and are much easier to handle.

A hot-bed with a single sash is large enough to be of much value, but the standard size calls for two sash, making a bed six feet square. The bed should preferably be dug out to a depth of thirty inches or more and the excavation should extend at least a foot outside the dimensions of the proposed bed.

If no preparation was made before the ground froze, it may be made on the surface, the manure being heaped up a foot or more and the hot-bed frame placed on top. It is much better, however, to have a pit whenever possible. This pit should be lined with leaves or straw before the manure is thrown in. It is always well to store the manure under cover for a week before it is to be used, turning it every day or two in order that it may become uniformly heated. If fermentation is not readily set up, it may be hastened by throwing

a pail or two of hot water on the pile. Later in the spring, beds are often made by throwing the manure directly into the pit, but when the bed is to serve for two months or more, it should be made carefully.

If the manure is about one-third straw, it will keep its heating qualities longer than if it is packed into the bed in a solid mass. If there is no straw in it, it is well to add leaves or some other litter. The manure should go into the bed in layers for best results, each layer being trodden down hard. The more manure, the longer it will hold its heat. Two feet is none too much for a hot-bed in Canadian latitudes. On top of the manure should go from three to six inches of the best garden loam. It is an advantage to have this loam sifted in order to get rid of stones and lumps.

Make Them Easily

Hot-bed frames may be purchased ready for use, but it is much less expensive to make them at home. Planks are advised, and it is well to have them wide enough so that about three inches will be below the surface of the ground. Commonly stout stakes are driven into the earth to serve as corner supports, the planks being spiked to them. In Canadian gardens hot-beds should be about four inches in front and a foot at the back. This will give the glass such a slope that water will run off quickly, while the rays of the sun will be admitted to nearly the entire surface of the bed. Of course, the glass should extend north and south with the slant toward the sun. If a plank is cut diagonally, it will give the two sloping end pieces. All joints should be tight, and it is well to bank up the frame all around with manure and earth. Oftentimes a bed is made extra tight by having the sash set in little tracks made by beveling inch and a half strips.

When the bed is first made the heat will probably run high. A thermometer should be thrust into the earth, and no seeds planted until the mercury shows a temperature of not more than eighty. Many vegetables should not be planted, in fact, until the temperature drops to seventy. It is an excellent plan to have one hot-bed for the heat-loving vegetables, like tomatoes, egg plants, peppers, and the like, with another for lettuce, cabbages, beets, onions, and celery, which like a night temperature of from 35 to 40 and from 45 to 60 in the daytime. The other vegetables will do well if kept at from 50 to 60 degrees at night, and from 60 to 80, while daylight lasts.

If there is a two-sash hot-bed, one half can be used for each class. In a single bed, or where many different kinds of plants are to be grown together, it is much better to use flats or pots than to plant directly in the bed; then they can be shifted about as they start, some being kept in the cooler parts of the bed, while others are exposed to full sunshine.

Of course, attention must be given daily and the glass raised or lowered ac-

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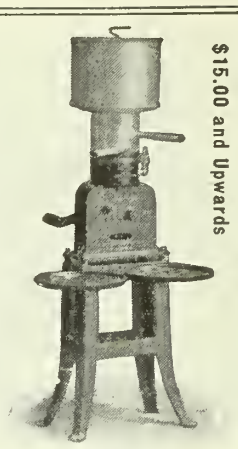

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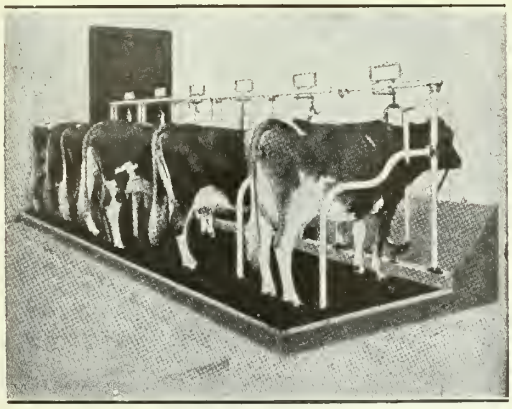

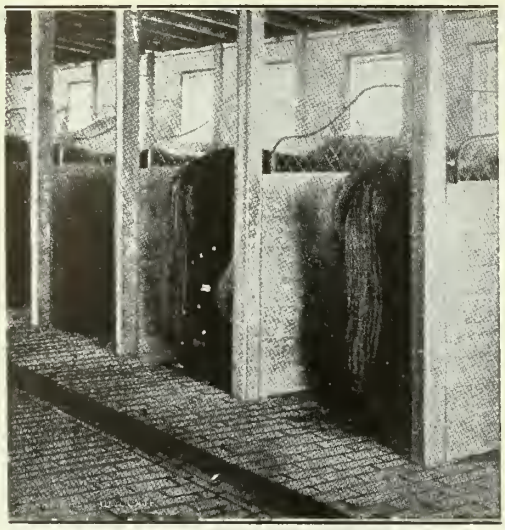

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MANGELS.—Keith's Prizetaker, Danish Sludstrup (a new intermediate, very fine). Prices for both, postpaid, lb., 35c; 5 lbs. or over, 30c.

MANGELS.—Keith's Yellow Leviathan, Yellow Intermediate, Mammoth Long Red, Giant Half Sugar. Prices, postpaid, lb., 30c; 5 lbs. or over, 25c.

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cording to outside conditions. Ventilation is exceedingly important, and, when a bed is new, it is well to leave the sash raised a crack, even on cold days, in order that any steam which arises may escape. As the weather grows warmer, the sash may be raised several inches each day, and finally lifted off entirely when conditions are favorable. Many gardeners find a brick convenient to use when ventilating the bed; it may be placed flat, on the side or upright, giving the sash a different elevation in each position.

Use Pots and Flats

Probably there is no better plan when using a hot-bed than to sow the seeds in paper pots or in dirt bands. The latter are even simpler than the pots. They are filled with earth and set on a broad strip of wrapping paper in the bed. When the plants are large enough, they are taken into the field and set into the ground, bands, and all. There being no bottom, the roots are not interfered with, and the wide bands of paper protect the young plants from cut worms. The paper pots can be used in practically the same way, the bottoms being stripped off when the plants are set into the ground. The amateur especially will find it a great saving of time and labor to use these inexpensive devices.

When there is very little room in the hot-bed, the slower growing plants like tomatoes and celery may be started in boxes in the house, the plants being transplanted to pots or set in the hot-bed when large enough. Lettuce and radishes grow so fast that those first sown may be allowed to mature in the hot-bed. It is better to sow them directly in the soil rather than in pots or flats. Both radishes and lettuce may be eaten within a few weeks after the seed is planted.

Harden Before Replanting

There is one important point to be remembered when starting plants in a hot-bed. They must be thoroughly hardened off before they are set in the open ground. Sometimes it is found advantageous to transplant them to a cold frame, but in any event the sash should be removed entirely on bright days and finally kept off at night, except when the weather turns cold or storms come up. If the plants are found to be growing spindly, one may be sure that sufficient ventilation is not being given.

A cold frame is simply the equivalent of a hot-bed minus the heating material. The excavation is not so deep and is filled in with rich soil, preferably containing a little well-rooted manure. Even with a cold frame it is possible to start plants long before the proper time for sowing the seed in the open ground. Many amateurs get along very satisfactorily with a cold frame. All the vegetables named may be started in such a frame, although, of course, much later than in a hot-bed. Many flower seeds are best started in this way also—such sorts as Snapdragon, Salvia, Zinnias, Godettia, Asters, Gypsophila, Clarkia,

Argeratum Balsams, Cobaea (Cup and Saucer Plant), Nicotiana (Sweet Scented Tobacco). Of course, many of these flowers may be started in the open ground, but they will give much earlier blossoms if sown under glass. In some sections, it is possible even to have Cosmos if one is careful to choose the early varieties.

Farmers sometimes find it an advantage to use larger cold frames on an extensive scale. They simply set up two long parallel rows of planks, laying sash across the top. When the plants are well up and the danger of frost is over, the glass and planks are removed and the plants allowed to mature their crops in the usual way.

In home gardens the use of small frames is a great help in forcing bulbs and perennial plants as well as early vegetables. Some of these garden frames are only two feet square and they are easy to handle. They are used much the same as bell glasses abroad. It is not difficult to make them at home by fashioning little boxes and sticking a square of glass over the top. These little frames placed over tulips and daffodils will bring them along much earlier than if they are left to themselves.

A Co-operative Plan for B.C.

By W. J. L. HAMILTON

DURING times of financial depression, such as we are now experiencing the public eye naturally turns to the high cost of living.

In a recent issue of a Victoria daily we find some items of great interest to B.C. farmers in the list of retail prices in Victoria for farm produce.

The prices for vegetables are quoted as follows:—Brussels sprouts at per lb. 15 cents, beets 4 cents, cabbage 4 cents, carrots 9 lbs. for 25 cents, cauliflowers each 20 cents, watercress per bunch 10 cents, pumpkins per lb. 4 cents.

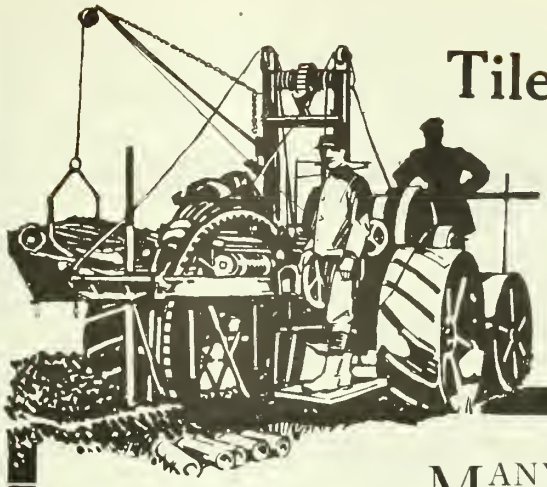
If however we refer to the farmers we find that out of every dollar the consumer pays for these articles but from 25 to 35 cents goes to the farmer.

For apples $2.50 to $3.00 per box or 45 lbs., is what the consumer pays, while the producer nets but $1.25 to $1.60.

I have seen lamb sold at 35 cents per lb. for which the farmer received 14 cents.

Prunes again sold at 12½ to 14 cents, which in the orchard brought a maximum of three cents. The result is that farmers do not raise such produce as this to the extent they should, but confine themselves largely to the production of poultry and dairy produce for which they receive proportionately better returns, owing to the fact that the creameries, through co-operation, have brought consumer and producer into closer touch.

Evidently then co-operation is the solution of our difficulties as regards all the produce raised by the farmer.



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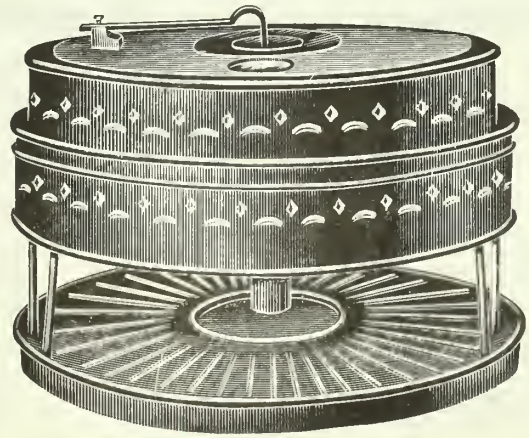

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ROSS RIFLE COMPANY QUEBEC, Canada

But co-operation, to produce the best results should be far-reaching, that is, that the area covered by any co-operative association should be sufficiently great to avoid the risk of two associations cutting against one another in the one town or district.

Again the scope of the one association should be wide enough to cover every branch of the subject: not only should it aim at selling all kinds of produce, but it should also embrace a consumers' league.

It is true that this combination may reduce slightly the price the farmer will receive for some of his produce, but, on the other hand, it will enable him to sell more at a higher rate and to get all his feed, groceries, sprays, machinery and the thousand and one other articles he needs, at a great reduction in cost.

The amount of produce wasted on Vancouver and the adjacent islands, and on the B.C. coast generally, which would be saved and sold by co-operative methods, would pay the cost of running the association.

In the matter of fruit alone, I have seen tons of plums, prunes, and apples lying on the ground rotting, which might have been canned, converted into jam, evaporated, or made into cider or vinegar had a factory for the purpose been available. Cold storage and smokehouses would also be of inestimable value.

At present there are some co-operative associations for fruit handling, where, through lack of cold storage and of storage space, the fruit has been thrown on the market for what it will bring in order to make room for other consignments.

It is a sad fact that in our nearest city, Victoria, as well as in Vancouver, and I believe also in every other town on the B.C. coast, the bulk of our vegetables and fruits come from California, Oregon and Washington. This is our own fault and due to the lack of co-ordination and co-operation amongst the farmers, but it points to the fact that in this province where the consumption far exceeds the production, co-operative stores, owned by the farmers' associations will, by direct dealing with the consumers, realize the best prices, and so be the best means whereby we can sell our produce.

It is true that at the city market recently opened in Vancouver, better prices are realized than have hitherto been obtainable, but on inquiry, I find that the bulk of the produce has been sold to wholesale firms, so that the highest possible prices have not been attained.

That more retail sales have been effected is due to the dislike retail customers have to carry parcels, which too many think is derogatory to their dignity. At any rate this fact proves that a delivery system is imperative if we want to do a retail business.

I have endeavored to show that out of every dollar the consumer pays, under present conditions, the farmer receives on an average, less than 40 cents.

Take a city like Victoria, with its wealth and population: one good co-operative store, embracing all the surrounding farming district, should sell over a million dollars' worth of farm produce in the year, to say nothing of what the consumers' league branch of business would bring in.

For the handling of this store a $50,000 capital would more than suffice. Take the share of the expense of running the store chargeable to the farmers' produce selling branch as follows:—

Rental, taxes, water and lighting, at per annum	$5,000
Interest on $50,000 at maximum of 10% per annum	5,000
Manager's regular salary outside of commission	2,500
Cost of motor delivery	3,500
Other help	7,000
Chartered accountant (frequent inspection of books)	1,000
Incidentals	3,000
Average cost of freight from all parts of district as six per cent. on one million dollars, delivered at store	60,000
One per cent. commission on sales to manager	10,000
Payments for a sinking fund, and a further charge for extension of business, three per cent. of the turnover or	30,000

This makes the total annual cost of running the store with a million dollars turnover amount to $127,000, leaving $873,000, or 87 cents on the dollar to be handed to the farmer for his produce instead of less than 40 cents as at present. And this is only the one branch of the business.

Let us now look at the other advantages accruing from this, not only to the farmer but to the whole country.

As one acre of good land should yield a clear income of from $800 to $1,000 per annum small holdings and intensive methods will follow, so that population will increase by leaps and bounds. And this population will be well-to-do, so that ready money will be plentiful, and all business enterprises will flourish and increase in numbers.

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A report from M. de Kruyff of the Dutch Agricultural Bureau at Buitenzorg, Java, points the way to real success in rat killing. He tried the modern method of giving a contagious disease to one rat in the hope that all would die. This proved useless. Finally, de Kruyff hit upon a novel use of carbon disulphide. All visible rat holes were first stopped with earth to ascertain which holes were inhabited, for the inhabited holes were found re-opened on the following day. Half a teaspoonful of carbon disulphide was poured in each of these holes and, after waiting a few seconds to allow the liquid to evaporate, the mixture of vapor and air was ignited. The resulting small explosion filled the hole with poisonous gases and killed all the rats almost instantly.

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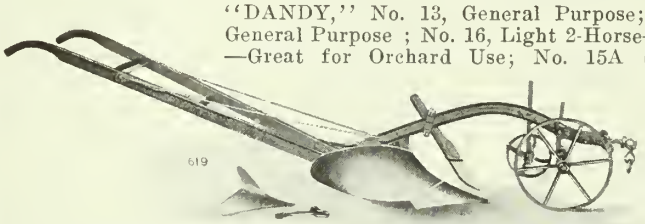

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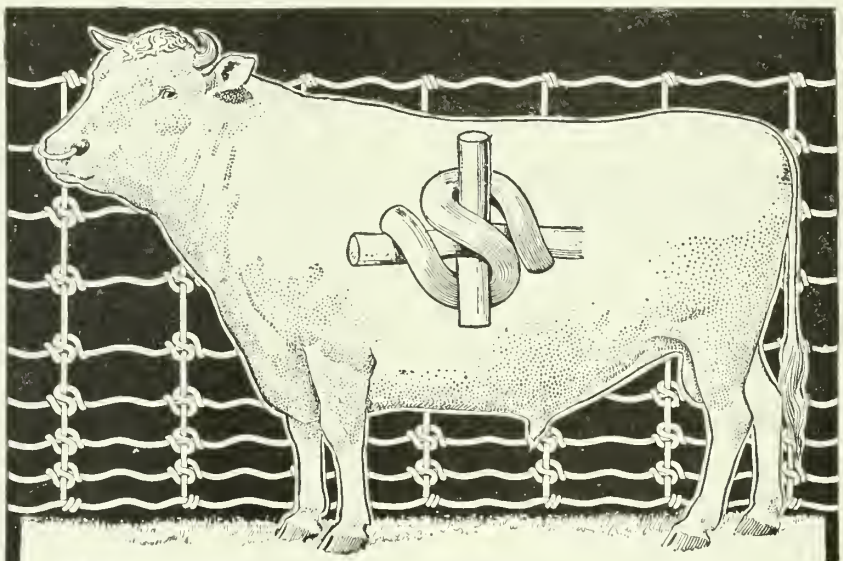

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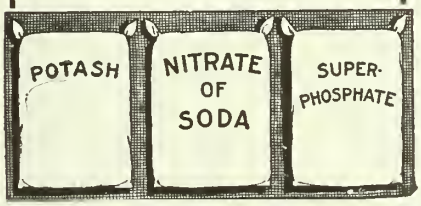

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Made from the best available Nitrogen, Phosphoric Acid and Potash, mechanically mixed, in perfect cured condition for drilling without clogging.

Write for Catalogue "S" and directions.

William Stone Sons, Limited
Woodstock, Ont.

Team-work of Farm Horses

A Driver is Largely Responsible for the Efficiency of His Team

By W. H. UNDERWOOD

The loss of energy and consequent loss of dollars due to poor men behind good horses is a matter that ought to receive more attention than it does. Few boys get proper training in the handling of horses. Their education comes like Topsy's and the waste of years would appal the farmer if he could sum it all. Efficiency farming like efficiency business demands that a man or a boy be encouraged to do his best, brainiest work on every job he tackles, whether it be the feeding of a pig or the handling of a team of horses. A poor workman always complains of his tools. The successful man never does.—Editor.

IT IS the healthy, well-fed horse that exhibits the greatest endurance and hardihood in the harness; so economical management imposes a liberal policy at the barn. A horse ill-nourished cannot exercise more than a shadow of its possible force throughout the season. A horse, like a man, may go on its nerve for a time, but an actual reserve of energy is needed to carry it through repeated emergencies without undermining its constitution. That reserve cannot be maintained when muscles hardened by work are allowed to waste away to furnish energy on which to perform their labor.

The emaciated horse loses money by his lack of power and by his waning vitality. Such a weak and inevitably short-lived horse should not be tolerated, much less courted. To be well fed a horse must not be stuffed spasmodically. Regular watchful feeding on good, sweet hay and an abundance of sound grain, near to the limit of his appetite when at heavy work and reduced one-half on Sundays and idle times, supplies a horse with suitable material for power.

Ready for work. Team owned by W. H. Underwood.

Shun Early Grass

Early spring pasture is to be shunned. Its laxative and debilitating effects reduce the stamina of its victim. Hay is better, except for the occasional variety of a short time at pasture on Sundays, for instance, until grass is well hardened by the summer sun.

Clipping, always beneficial to soft horses in careful hands, will greatly increase their power. The horses that go to the fields with their overcoats on and attempt to work in the moist spring air, boiling under summer heat, have to endure unnecessary distress. Their owners will lose money in hours spent resting hot horses and in the flesh their teams lose during their hardship. These horses with long hair cannot be given as thorough grooming as they deserve. A horse must have the dirt brushed clean from his hair and hide every day that he works, and if it is done twice a day so much the better. Something about the grooming instils vigor into a horse, and the removal of dirt and the stimulation of the skin goes far toward preventing harness sores. Next to a snug, perfectly-fitting collar and well-adjusted harness, it is most essential.

But the individual horse is but one of four or more at much of the field work on farms where implements are designed to cover ground rapidly. He must match his mates in strength. It is just as true that a team can do no more than its weakest member as t is that it can haul no more of a load on the road than it can handle on the steepest grade. Much horse power is dissipated around these flaws in our economy, but every driver can adjust his hitch to accommodate his several horses.

It is a waste of sentiment to excuse the strong horse from taking part of the load from the weak one. If he is able to do more than a numerical share of the work of the team, make him do it. The whiffletrees can be adjusted to divide the load, and economy demands that each be allowed in this way to do a full day's work according to his strength.

If the horses cannot be evenly matched in the flesh, match them in the machine. But the facility with which this may be done should not obscure the advantage of evenly-matched horses. Let any one compare the amount of feed his horses require and the work they can do and he will discover that the weaker horses are expensive boarders. The plug horse is of small account except as a source of expense.

The driver is necessarily responsible in large measure for the amount of ground a team covers in a day and for the thoroughness of the job. In actual

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British Farmers who know the feed and fertilizing value of "Maple Leaf" Brand Oil Cake Meal, send over 4,000 miles to get it—and it pays them.

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Feed your stock and enrich your soil with

A trial will convince you of the profitable and superior qualities of our product. Made by the reliable old process. Absolutely pure. Prompt attention to all orders. Our **booklet, "Facts to Feeders," will explain more fully the value of this nutriment. Write for sample.** Mention this paper.

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Works—Cardinal and Brantford, Ont.

work accomplished in a season and in the profit of it, some employees are worth twice the wages earned by others. A man's worth at farm work depends now more on his wits, his skill and his speed than on sheer strength. It takes some head work to handle even so simple an outfit as a team and gang plow so as to waste no time during the day, and a man without some mechanical ingenuity is largely at the mercy of luck in handling machinery of any kind. It is the man with the faculty of keeping team and implement in working order and steadily on the move that does the big season's work. It is not the big single day's work, but the average, that measures a man's worth. The minutes and half hours saved now and again tell mightily in the long run. In such a matter as carrying and harnessing a team, all depends upon the man; some will get four horses ready for work in half an hour and have them looking better than they will after an hour's work by another man.

But even the most industrious of men and the best of teams will fall short of their possible accomplishments unless the entire farm is managed on a far-seeing plan. This plan must be dominated by one thought—horses must never stand idle. There is no justifiable benefit to a healthy horse from being idle on a week day. He needs at least a quarter of a day's work or its equivalent, to maintain his health. Keyed up to the minute, with muscles hard and appetite keen, the most natural thing for the horse is steady work. Horses sometimes die from azoturia following a day or two of absolute idleness. Storms will enforce some loss of time, but teams should not wait for the water to settle away in the fields before beginning work again. There are always jobs apart from crop work that teams must do some time in the year, and light loads can be hauled as well after an April rain as in January. Many bits of work can be done as well six months ahead of time as when they demand immediate attention. The year's work is done easier, with less anxiety, less rush, less expense and more profit, if work is done a few days or even a few months before it is needed instead of a few days or more behind time.

When a farmer's horses are idle, especially on fair days, he may well ask himself, "why?" With a policy of beginning work before it becomes urgent, there is less temptation to push teams beyond their strength. Every excessively hard week's work is dearly paid for in lost flesh and flagging spirits in teams, if not in actual sickness.

The team work is necessarily a prominent feature of present-day farming, and it deserves such study as befits its importance. The tillage, the crops, the income of the farm, are largely borne up by the economical management of work horses. These furnish the great productive force which links with the genial rays of a summer sun to coax an income of huge crops from a reluctant soil. Their productive power may be crippled by blundering management or augmented by wise control.

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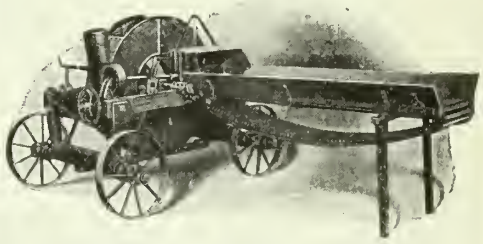

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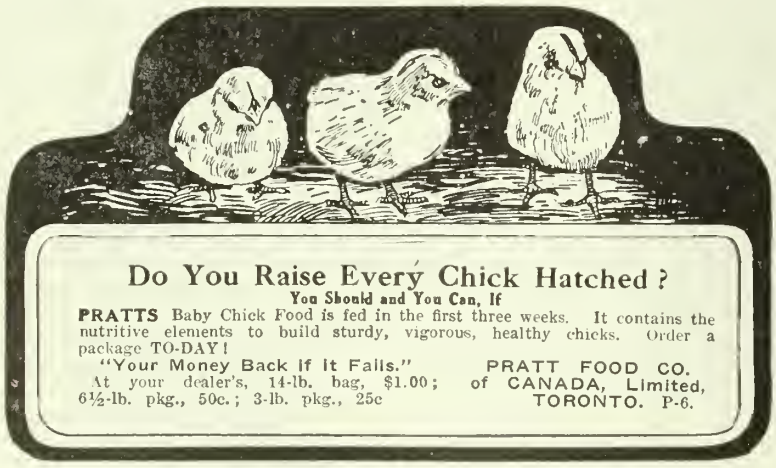

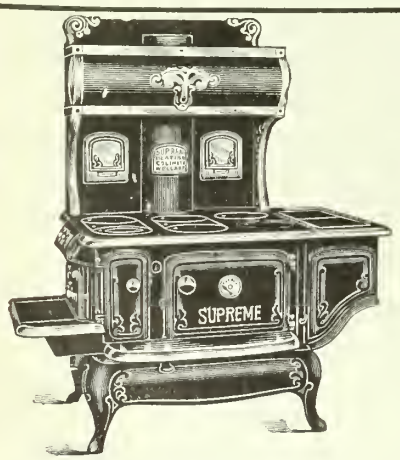

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The Supreme Heating Co., Welland, Ont., Can.

The Farmer's New Hired Girl

How Co-operation Can Lighten the Work in the Farm Home

By ALBERTA M. KEPPER

THE PRESENT brings increased work to the farm woman, albeit she has given over to factories much of the work her mother performed, and invention puts many helpers in her home.

She insists that her family be given better educational advantages than the mother enjoyed and toils throughout the school year without murmur that the children be neither absent nor tardy. She contrives to clothe them in better style. She puts the best years of her life into the struggle to give the world men and women that are a credit to the era that produced them.

The farm women, it is declared, mother a greater per cent. of noble men and women, relatively, than any other class. Ought not this woman's health to be safeguarded? Can she keep up this beautiful record of the foremothers and not meet the changed conditions on their own level, that she may cope intelligently with to-day's problems?

Many an educated and refined woman has given up her cultural education entirely. The music is discontinued; the brush is idle. This is true in many instances because women were thought to become capable housewives through instinct. Sadly we come to see how untrue, I dare say, how unfair this is to our girls. Were they given a practical education, not, however, excluding the cultural, the deftness given the hand at housework would turn off a reasonable amount and leave some time each week for recreation.

The overworked woman is not companionable. She is not a careful dresser, nor is she as young in appearance as in years. She cannot give her unborn child a strong physique, nor can a being dulled by disuse of mentality, transmit a brilliant mind to its offspring. The work in the farm home must be lessened or we fall from our pedestal where all the world turned to us for the rich red blood that conquers in industrial, professional or political life. Our young people, keen-eyed and calculating, flee from a life that would mean a repetition of their mother's. Housemaids are few and fickle. Plainly, relief must come some other way.

Co-operation—what it has done and the more it might reasonably do for women on the farm—is of vital importance. In every remote community where the sale of milk to city trade is impractical, the co-operative creamery has sprung up, not only relieving the housewife of the drudgery of churning and caring for butter that because of its varying quality found a poor market, but the income from dairy products has increased until the monthly check is one of the dependables in the farm home—often being the

sole item that shows a balance in favor of the producer.

In Chatfield, Minnesota, the co-operative idea has been extended to include a first-class laundry in conjunction with the creamery. The same engine serves both plants. This laundry is financed through shares of stock owned by the patrons. As the money making feature is eliminated, the superintendent is free to insist that no harmful chemicals are used in cleaning. Women are enthused with the new order of things in that propressive community. They can now afford the table linens refined table service demands, because they do not have to face such stupendous ironings each week.

This alone will have such a pleasing influence on the farm child that it ought to make the co-operative laundry idea popular eyerywhere, yet no one should expect a mother that has to fill every position from nurse to bootblack, to find time and strength for all the refining touches to life which her ambitions would supply.

The flat work comes home, sweet and clean and disinfected for the sum of 5 cents per pound—a good sized wash would cost but a dollar. What farmer can afford to see the mother of his children spend so many trying hours weekly for such a price?

It occurs to me that this idea of co-operation which in the two instances named has not been found wanting, might well be extended to include a bakery and butcher shop.

A baker told me she made 72 loaves from one sack (48 pounds) of flour, that retailed for 5 cents each. The poor man cannot afford to pay such profits, and, sick or well, the wife makes the bread consumed by the family. Co-operatively the bread would come to the farmers' table at actual cost of production and the wife and mother would have a respite from this heavy chore.

How naturally the butcher shop seems to fall into the co-operative plan. Ice must be stored for butter making or a cold room had by other means. Meats could be cared for in a separate compartment, and if the members of the association desired, the products could be the choicest from the farms, cheaper, to the consumer than the inferior grades sent back to the country markets from the great packing plants.

If all these could be centrally located near the consolidated schools, much unnecessary travel would be avoided.

Think it over. We know thousands of our young people leave the country, and it is up to us to eliminate a fair share of drudgery that one may continue life upon the farm, and yet find time sufficient for self culture and recreation, and through co-operation reduce the cost that brings these helps within the reach of our poorer people.

When man marries he continues his chosen profession. Is it fair that women be sentenced to hard labor for life and, although nature is lavish, shall she continue to refuse to exercise her talents because there must be a menial in every home if the remainder of the family is to enjoy life?

Give Her BOVRIL

Bovril presents the goodness of beef in a handy, readily-prepared and easily-digested form. It is a wonderfully invigorating beverage. It builds up the weak constitution and strengthens the strong one. It guards against the attacks of colds, chills and influenza.

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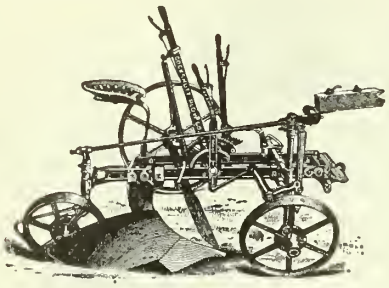

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This BEAVER Sulky Plow can be fitted with wide or narrow bottoms, so is adapted to all classes of work. The triangular wheel arrangement makes it very easy riding over the roughest ground. The rod connection between furrow and rear wheel axles enables it to follow closely every irregularity of the surface, and makes for continuous, uniform furrows. Furnished with rolling or knife colter or jointer; choice of several bottoms.

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have proven their ability to turn the deepest furrow in the shortest time with the least effort of operator and horses.
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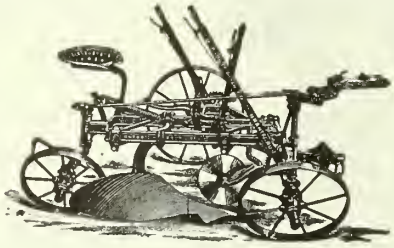

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Making Money with Orpingtons

(Continued from page 16.)

broilers when the price was good, and crate fattening the later ones when they weighed about four pounds apiece. These birds usually gained about one pound each during the fattening period, and the majority of them were shipped to Toronto in lots of ten to twelve to the box, and brought from 18c to 20c per pound. There is no doubt but it pays to take a little extra trouble in fattening and dressing poultry for the best market, as what could be more gratifying than to gaze upon (after all your labors) a nice box of plump chickens attractively packed even if the killing and plucking is one of the most tiresome branches of the business.

When I left the farm last November, there were still a few surplus pullets and cockerels to dispose of, as you will see by the following table. Since then they have all been sold, and some of the cockerels went at $1.50 each. Many of you may think I have put too high a value on the pullets held for our own use, but I think not, as these are the choice of the flock, and the forty-five at $2.00 each, are indeed a beautiful lot, and as one poultryman who visited the plant said, "I never saw a finer lot in my life."

In order to house the additional laying hens this winter, a 12 ft. by 12 ft. box stall in the barn and one of the colony houses have been called into requisition, and the birds have been housed in the following manner: about sixty in the hen house, twenty-five in the barn, and twenty in the 8 ft. by 10 ft. colony house, which on November 1st was drawn up quite near the house in a nice sheltered spot, and not far from this is one of the smaller colony houses where the six breeding cockerels are being kept for the winter.

I am often asked the question: "Did you do all the work yourself," and to answer this I must say "not altogether," as all heavy lifting, such as carrying grain in large quantities, filling hoppers, etc., moving colony houses, and the annual house-cleaning and whitewashing of the hen house was done by the men, a part of the work that could always be done by the men on any farm; and I nearly forgot to say that I had assistance with part of the killing and plucking, but all the other work I did myself, such as directing, handling the eggs for incubation, cleaning and disinfecting incubators and brooders, feeding, and doing the light carpentering, such as making chicken coops, feed hoppers, shipping crates and fattening crates, and last but not least, gathering the eggs, which is the best of all when the hens are doing their duty.

I might go on indefinitely enumerating many little incidents in connection with my work with poultry, such as the time we took some of the birds to the show last October and came home rejoic-

ing, having carried off the biggest share of the red and blue ribbons, but time and space will not permit; so I will conclude by endeavoring to put in a good word for our little Ontario hen, who will do her best and readily respond to just ordinary reasonable attention, which can be given by the women or girls on many of our farms, who, I am sure, must have time at their disposal for such work.

April 1st, 1913.

Stock on hand—		
85 hens and pullets, 5 male birds		$110.00
Expenditure—		
Feed, kerosene, express charges, death losses, wick, etc.		$140.00
Cash Receipts—		
145 Dressed chickens	$104.75	
4 cockerels (live)	6.00	
83 pullets (live)	87.25	
70 hens (live)	36.11	
4 cocks (dressed)	3.40	
442 dozen eggs	123.00	
7½ settings eggs	3.50	
		$364.01
On hand to be sold—		
22 pullets	$ 22.00	
20 cockerels	20.00	
		42.00
On hand to carry over—		
45 pullets @ $2 each	$ 90.00	
25 pullets @ $1.50 each	35.00	
20 pullets @ $1 each	25.00	
6 cockerels	17.00	
18 hens @ $1 each	18.00	
1 cock	1.50	
115 birds	$186.50	
Stock on hand, April 1st, 1913	110.00	
		76.50
		$482.51
		$340.01

DUCKS.

April 1st, 1912.

Stock on hand—		
3 ducks at $1.50 each		$ 4.50
1 drake		1.50
		$ 6.00

Expenditure.		Cash receipts.	
Feed, etc.	$25.65	67 dressed ducks	$53.10
On hand to carry over—			
7 breeding ducks at $1.50 each	$10.50		
Less stock on hand acct.	6.00		
			4.50
			$57.60
			25.65
			$31.95

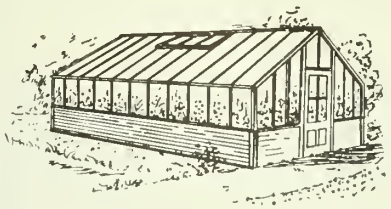
Value of Wet Feed for Hogs

The test that was made by the Utah Experiment station in the matter of feeding dry feed as compared with soaked or wet feed to hogs will be of interest to the breeders.

Three sets of pigs were used for the test. One set were fed food soaked twelve hours before feeding, another set were fed food only wet just before feeding, while the third set were given dry food. There were three pigs in each set and they had access to salt and wood ashes continually.

The result of this test ought to indicate at least a considerable conclusiveness in the matter of feeding as it is a point on which many farmers in Canada have disputed for a long time.

In this contest the wet-fed pigs made 26 per cent. greater gains than those fed on dry grain and 15 per cent. more than those fed soaked grain. The pigs receiving the wet food ate the most, but required the least quantity for 100 pounds of gain. The dry food set made the smallest gain and required 22 per cent. more food than those having wet food.



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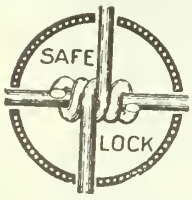

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The Friendliness of Alfalfa

(Continued from page 6.)

When an old alfalfa field is ploughed up the dead roots make a great quantity of humus in the soil which is very rich in plant food, especially nitrogen. The spaces occupied by the roots after their decay leave the soil full of small holes that act as drains to carry water down into the subsoil in the spring or after heavy falls of rain. The passage of the roots deep down into the soil breaks it up more thoroughly than any subsoil plough or implement that has ever been made. This fine physical condition of the soil is obtained without any manual labor on the part of man or beast. The soil being broken and pulverized by the action of the roots to such a great depth causes it to hold more water in suspension, the same as a sponge. Crops that follow alfalfa are remarkable for their vigor. This is owing to the fine physical condition of the soil and its thorough pulverizing to a great depth, good drainage, plenty of air in the soil, a great supply of available moisture and the large amount of humus and plant food left by the decayed roots and stubble.

Don't Plough Your Root Land

Land on which alfalfa is to be seeded should have a liberal dressing of barnyard manure followed by a crop of roots or corn that has received good cultivation and freed from all weeds and grass, that is to be seeded to alfalfa the following year. On most Canadian soils it is not advisable to plough land after a root or corn crop either in the fall or spring. In the spring, before seeding, work up a very full seed bed with the disc or a spring tooth cultivator and harrows. The cultivator should be run over the field two or three times or oftener if it is hard and cloddy with frequent use of the harrows and roller so as to make the seed bed very fine.

Procure the best and purest seed that can be purchased and sow at the rate of 15 to 20 pounds per acre. On farms that alfalfa is being grown upon for the first time, it is safer to sow 20 pounds per acre than less. Canada grown seed is likely to give better satisfaction than imported seed, as it has had the advantage of being climatized.

Alberta May Excel

The common alfalfa with violet flowers is better known than any other variety, and if grown in Canada for a few generations is pretty sure to give a good account of itself. There is a variety known as the variegated alfalfa on account of the flowers being a mixture of blue and yellow that has proved to be very hardy. The writer has had sent to him a very fine sample of Grimm's alfalfa seed that was grown on the irrigated lands of Alberta. That province may prove to be one of the greatest alfalfa seed-producing countries of the world of a hardy strain from being located so far north.

If alfalfa has never been grown upon the farm it will be well to properly inoculate the soil. This can be done in two ways—First, by spreading or sowing a few hundred pounds of soil per acre from an old alfalfa field. This should be done when the sun is not shining brightly, and the harrow should follow immediately to prevent the sun destroying the bacteria. Secondly, the inoculation may be effected by the use of what is known as Nitro-Culture for alfalfa, which may be procured from the bacteriological departments of the various agricultural colleges.

My Seeding Experience

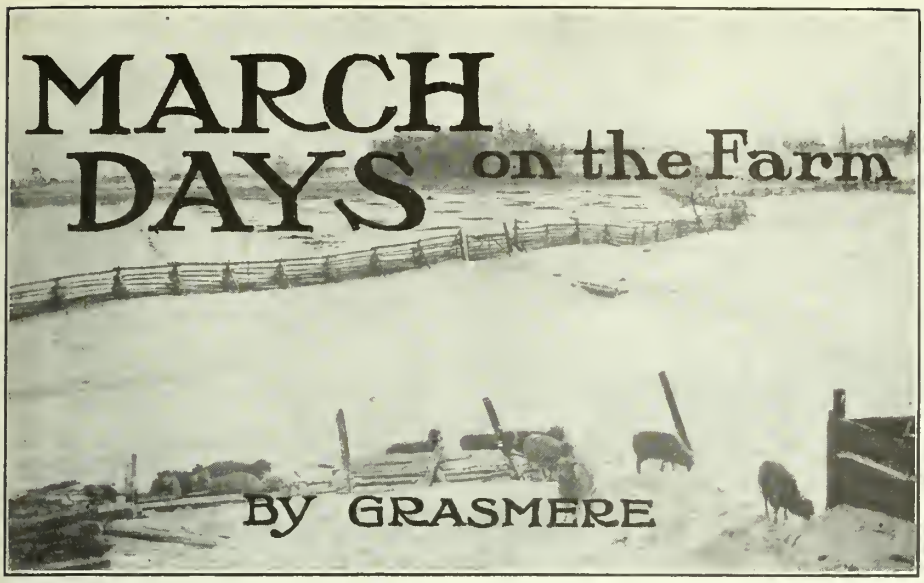
Most Canadian farmers prefer to seed down with a nurse crop. The best grain to sow as a nurse crop with alfalfa is barley at the rate of three or four pecks per acre. Drill the barley in and sow the alfalfa seed in front of the drill, an evener and better stand will be obtained than if sown behind the drill. The reason for sowing barley in preference to other grain as a nurse crop is that it matures in less time and takes less moisture from the soil than any other grain crop. If the seed is sown behind the drill and covered by giving the land a cross stroke of the harrows, much of the seed will be drawn into the drill marks where the grain is sown. The small alfalfa plants will be smothered or crowded out and the strong roots of the grain will rob the tiny roots of the small alfalfa plants of the soil moisture which will cause them to perish.

Some Farmers Yield to Temptations

First:—The temptation to turn his stock into the field and eat it off a little. The cows give such an increase in the flow of milk from being turned on the young succulent alfalfa that he tries to make himself believe (and he frequently succeeds) that another day or two of pasturing will not injure such a splendid field of alfalfa. The following spring usually shows the result of such folly by the greatly reduced number of plants.

The second evil is the advice so freely given by people who have a theory but little practical knowledge. They will advise the cutting off the plants with the mower late in the fall so as to prevent smothering of the young plants during the winter. They will tell you that the water will run down the stalks from the rain and melted snow and rot the crowns. I have never seen too heavy a top in the fall to go into the winter with. A heavy top in the fall will help to hold the snow in the winter and form a blanket over the field to protect the crowns of the plants. It will also help to break the force of the dry frosty winds that are so prevalent in March and April, which are very destructive to alfalfa.

The roller should be run over the fields in the spring to break down any stubble and stalks that are standing. The dead stalks are not noticed in the hay when cut.



March days are proverbially windy days. Naked swaying branches, chilling winds, golden sunsets and bright, frosty mornings are pictures kaleidoscoping before the man on the farm. Yet March should be considered a friend of the farmer. For in this month that lies between the Winter and the Spring, there remains a getting-ready period which may increase an extra-successful Summer to the man who sees ahead.

The departing Winter has not been a bad one in Canada. We have had rather pleasant weather, with just a dip into the lower mercury now and then to remind us of our good Northland. Enough snow has fallen on the fields to bespeak a good crop for next year.

To the live stock feeder, the late open Fall has been a real blessing, while the 1913 hay crop and well-saved straw and corn fodder has meant much. Particularly fortunate is the man with the well-filled silo. It has settled the question of his feed bills and when more farmers count on a double silo, with one kept for Summer feeding, the vagaries of any season will not amount to much as far as he is concerned.

The depression in financial circles that has been felt more or less all over the country, will carry further the useful lesson of not having all one's eggs in one basket. The mixed farmer is sure of returns from some feature of his work. Yet the special farmer has made good money, and 1914 promises to be kind to all farmers. Prices are good. Everybody has to eat, and be clothed, and that is why, in times of depression, that the farmer occupies the best position of any.

The lesson for every one of us, is to apply our minds to the business in hand and do the best we can. In this resolve, March has its duties. Those duties must be done now or the whole season will suffer. This issue is full of live subjects for the helping of every farm reader. Then, when we have done our part towards the work of a big and successful season, we can let the winds of March blow on, for they blow in the gold to our pockets and the joys of living to our hearts.

Money in Ducks

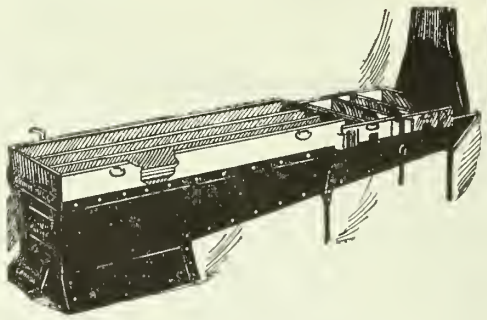
Proverbially, the duck is looked upon as a glutton. Yet money can be made by getting them off at ten weeks or so. The market in our big cities is exceptionally good for them. Indian Runner Ducks often lay more eggs then hens which sell as well in the egg market.

Test Your Seed

It is quite an easy matter to test seed grain for germination percentages. Many a man saves enough to pay his rent by this method. Write your nearest experiment station for the latest bulletin on seed testing. It pays to keep closely in touch with the work at the experiment stations.

With the Hens

All good farm flocks should be laying now. The singing hen and the red-combed pullet are ready for business if the feeder and farm manager understands his superintending cares as well as the hen does hers. Cleanse the house. Watch for lice. Let the sunlight in everywhere. Keep the windows open at the south. Read the special poultry article in this issue. Much money can be made from hens. Any ordinary farm should net $200 a year from this source



THE question of boiling sap depends on yourself and boiling outfit. The best sap is often ruined with poor outfits, and all your time and trouble goes for little or nothing. It is your duty to make a syrup that is clean, pure and wholesome, and high priced. You must make it under proper conditions. The Champion Evaporator is the best shallow boiling machine on the market, and will make your maple grove the best paying proposition on your farm.

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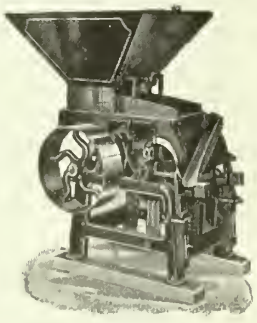
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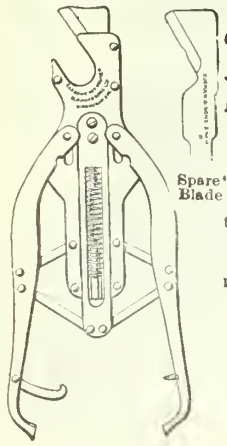

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The Geese are Laying

Already the careful farmer will have provided a pen for his laying geese where they can be undisturbed and where they will make their nests. Goose money is easy money. They take little care in raising and there is always ready sale for them. Do not keep the eggs too long before setting them. If the goose is not ready, set the first ones under hens. Feed a little corn and chopped roots during the breeding season.

Spray the Trees

It is now an accepted theory that the dormant spray on fruit trees does a great deal of good. For apples use the Bordeaux mixture without the lime, or the strong lime-sulphur spray—one to ten.

It kills scale insects and greatly weakens many forms of insect pest life that are about to awaken during the first warm days. It is a good practice to use a pure lime spray on young trees as it tends to offset the sun's heat on one side of the limbs, radiating instead of absorbing it.

For Spring Planting

It is not too late to put in an order for nursery stock if you have not already done so. There are many places, possibly in the garden or orchard where a dead tree should be replaced. Again some waste places could be profitably set to fruit. Reliable nurseries should be consulted as one cannot afford to take chances on trees not likely to be true to name. There is a big demand for gooseberries, black currants, and strawberries, and the best varieties should be selected.

With the Brood Sow

About this time of the year many farmers arrange to have their young pigs arrive, and extra care is needed to insure profits. It is wise to have a good farrowing pen in which the sow becomes at home before the time to farrow comes. In feeding sows watch to see that their bowels are in good condition. A drink of warm water should be given and very little grain for two or three days. Often it will be found advantageous to clip off the little sharp tusks from the little pigs, as it will prevent sore mouths and laceration of the mother. It is well to remember that if there is something wrong, there is always a cause behind it.

With the Growing Hogs

Considerable saving is effected in the winter feeding operations by using mangolds and alfalfa. It is surprising how much clover growing hogs will eat when it is fed to fed to them on a hard cement floor. It gives them plenty of protein thus saving in the heavy meals. If the hogs are not doing well and appear rough and dirty, it is likely they are bothered with throat and stomach parasites. A half teaspoonful of turpentine to each pig once a week for three weeks

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will do wonders. Always keep a box of ashes, sulphur and charcoal within reach for it will save many troubles in the digestive tract. Prices for pork cannot sink very low this season. Breeding stock is scarce, and altogether the outlook is favorable.

Clean the Stables

Modern stables have plenty of windows. This is a good time to clean them. A little Old Dutch will do wonders on the glass. Brush down all cobwebs. Sweep out the floors and spray with carbolic or coal tar disinfectants. A good coat of whitewash will brighten things up and prevent much vermin from lodging in the corners. Animals do better in clean stables and men feel better also. Two days this month will add 100 per cent. to the looks of the stables. This cleaning is most important in the poultry pens. A man's brains were given him to plan for the creatures under him. Many a calf has been handicapped for half the summer by reason of the shiftless management of the farmer during March.

The Horses

All farm horses should be fed well, exercised often, cleaned regularly and put into good physical condition this month. If you have no regular work for them, it would pay to send them out in the teams turn about, or for an extra trip to the town. Keep their muscles in shape for the exacting seeding work that is coming.

The brood mare should have plenty of exercise. Feed only a few oats, a little bran, and clean hay. For roots turnips and mangolds are good.

Feed the colts just a little better. It will help them in going on to the pastures to be in splendid flesh. Above all do not keep their mangers full all the time. Their hoofs may need trimming. Do not allow horses to stand for a long time on hard floors.

Milch Cows

The dairyman needs to keep a watchful eye on his cows during this month as the cows like a change of food, plenty of fresh air, and clean drinking water. By no means, allow the stables to remain dirty or dingy. It is not too late to start a daily record of milk production.

The man who is making the most money out of his cows looks to it, that every cow is doing her share in the work of making dollars. Let no sentiment about "old Lineback" detain anyone from weeding out the herd.

It is also well to keep pure-breds. There is going to be a constant demand for first-class dairy stock and no form of farm work offers more money-making possibilities than does the dairy herd. Read Prof. Dean's article in February, March, and April numbers.

Why not buy a pure-bred calf now?

With the Fat Cattle

Cattle feeders have seen better prices since the opening up of the American market than they ever realized in Canada before. There is a shortage of feed-

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They meet every requirement for cleaning and polishing shoes of all kinds and colors.

"GILT EDGE." The only ladies' shoe dressing that positively contains **Oil.** Blacks and Polishes Ladies' and Children's boots and shoes, **shines without rubbing,** 25c. **"FRENCH GLOSS,"** 10c.

"ELITE" combination for gentlemen who take pride in having their shoes look A1. Restores color and lustre to all black shoes. Polish with a brush or cloth, 25c. **"BABY ELITE"** size, 10c.

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"BULLY SHINE." A water-proof paste polish for all kinds of black shoes and old rubbers. Blacks, polishes, softens and preserves. Contains **oils** and **waxes** to **polish** and **preserve** the leather. **Large** tin boxes, 10c. Boxes open with a key. Russet "Bully Shine" same size and price.

"CHIC" liquid dressings for cleaning and recoloring **all** kinds and **colors** of Suede, Buck and Nubuck footwear. Any color, 25c.

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are equipped with the most efficient, tried and tested valves. They never fail in service. The combination wood and iron handle will not break when disconnected. H.-A. Co. pumps are guaranteed not to freeze in winter.

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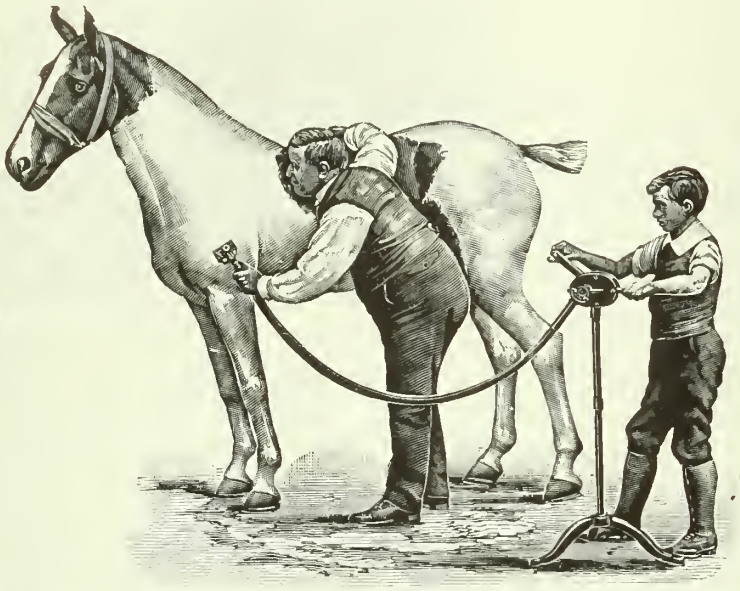

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ers. The demand for grass cattle will be strong and the temptation to pay big prices may lead some people into boarding a lot of steers for nothing. However, there is money for the wise salesman.

Keep your feeders now in first-class shape for sale any day. With plenty of silage and meal there is no danger of a loss where the animals are kept thrifty.

It is good advice to get into the breeding game as soon as possible. The demand for cattle is going to keep ahead of the supply for years, perhaps forever. With the average farmer who expects milk and meat, and who is not a dairy expert, there is no better cow than the Shorthorn.

Select Seed Grain

The big Corn Show that closed in Chatham, Ontario, last month demonstrated to all present the need of seed selection. The field crop competitions in the other provinces also prove beyond question that big well-selected seeds pay. Note the picture accompanying the corn article in this issue. You learn from it, what good seed means. A good fanning mill is a big money maker. Many farmers find it pays to hand-pick small portions of their seeds.

Beware of the wild oats in the seed. Get the seed from your best fields and fan out all the small grains. Speak for your clover seeds now. Be sure they are pure. Why not start a seed plot of your own this year? If farming is a good business, make it interesting to every member on the farm. Growing better and bigger returns is always good news to the farm youth.

Getting Out Manure

March is a fitting time to haul out manures directly to the fields, where labor conditions later on will seriously affect the situation. A top-dressing to the meadows and the orchards will be most beneficial. The manure loses little by being spread now and all the ingredients with every thaw, sink into the soil and are largely retained. The only advantage gained in hauling it to big piles on the fields, is to secure a further rotting of the coarse straw. But even this is of doubtful value. Rock phosphate is about the only mineral fertilizer that ought to be mixed with manure and it should be applied in the stables or spread lightly at regular intervals over the yards. Lime and land plaster should not be mixed with the manure. The yield of hay on old meadows can be doubled by a careful winter top-dressing.

In the Tool-House

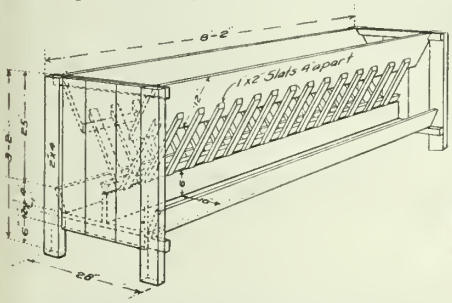
The sowing of spring grains should be done just as early as the land can be worked. To this end it is necessary that every machine should be ready for work at a moment's notice. March should have a few days laid over entirely to work in the farm tool-house where each machine is, at least, inspected. As far as possible put it in shape, note repairs necessary and have them done at once.

Some paint may be needed. All bearings should be oiled and wearing surfaces of drill-shoes, plows, cultivators, and discs cleaned and rubbed with coal oil. The harrows may need sharpening. All nuts should be inspected and tightened. An extra set of whiffletrees and a neck-yoke should be provided for in emergencies. Often these can be picked up at an auction sale. These little attentions will save dollars of time when time is more valuable.

It may be necessary to buy some new machines. Write for catalogues to all the known makers and then decide for yourself. Know what you want and get it, although something new may be learned "from every fool" as one farmer put it.

Spring Lambs are Coming

Sheep raising in Canada is only a small business compared with what it ought to be. Even in the United States the number of sheep has fallen in three years by nearly five million head. But after every low spot there is a high spot and 1914 promises well for pure-bred lambs. Even butcher lambs are well worth attention. Wool ought to be a better price this year.



Combination rack for feeding hay and grain. Sheep can feed from either side.

The ewes should receive more grain, from 1 to 1.5 lbs. of mixed oats and peas after lambing, with plenty of clover hay. Make a creep for the young lambs where they can go in and learn to eat some bran and oats. It gives them a good start before grass comes.

If you have no regular feeding racks it might be profitable to make one now for next year.

Dispose of Rubbish

Too many farmers allow old useless rubbish of second-hand machinery, old tools and a nondescript lot of old iron to accumulate around the barn. Others go further and even purchase at every auction sale, some cheap but useless item to add to the pile.

All this betokens the love of hoarding rather than a well-ordered mind in the farmer. It is well, of course, to have labeled boxes in the tool house where odd bolts, nuts, washers, brace irons, hooks, plow repairs, wheel repairs, pulleys, etc., are kept. For often some simple repair can be made from them. But the old junk is useless. Sort it over and put in their boxes the probable needs and sell all other to the junk man. The few things needed by the ordinary farmer will not demand the big junk piles we sometimes see on farms.

One old farmer, we knew, had one floor of his barn covered with old iron

Style Book for 1914 of "Quality Line"

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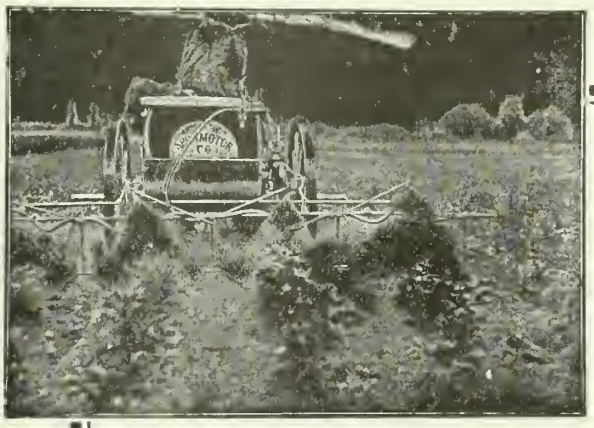

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This man got tired of having his potatoes and row crops ruined year after year. Now he gets after bugs and other parasites with a **Spramotor.**

See how thoroughly he drenches the plants with the beneficial spray. Look closely at the picture and you will see that while the overhead nozzles spray directly down on the plants, separate nozzles **between the rows** are forcing the mixture under the leaves and through the stems so that no single piece of foliage is missed. That's the thorough **Spramotor** way, and the only way to spray if you are going to do it properly.

Twenty years' experience in making spraying machines has taught us the important facts. We have seen men improve their yield of potatoes **from** hardly any to 400 bushels an acre, with a **Spramotor.**

The outfit shown above sprays an acre of row crop in fifteen minutes—the horse furnishing all the power and giving 200 lbs. pressure at the nozzles. Over twenty different patents cover the valuable improvements in **Spramotors** that no other machine can have.

NOTE:—Write us about your spraying needs. Tell us what you have and we will forward full information about a **Spramotor** that will exactly fill the bill. We make them in many styles and at prices ranging from $6 to $350. You will also receive FREE by return mail, a copy of our authoritative treatise on Crop Diseases. Get in touch with us to-day.

C. H. Heard Spramotor

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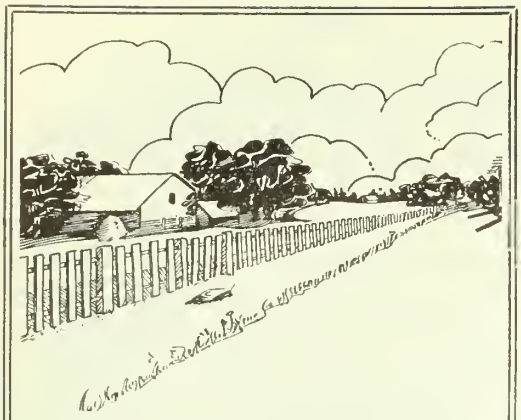

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A coat of good paint will work wonders toward renewing the appearance of both house and barns.

The value of a good coat of paint should not be under-estimated — it protects the exterior from dampness and decay, beautifies and adds value to the barn. In the interior it brightens up the dark walls and makes the home pleasant and cheerful.

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State in inquiry if you prefer booklet in French or English.

and odds and ends that he had gathered in a short lifetime. He was always saving rubbish and really never had anything first-class. Don't do it. Our lifetime is too short for such nonsense. Clean out the rubbish.

In the Garden

Cleaning out of all raspberry canes, and trimming of the bushes can be done this month.

Order your vegetable seeds early. The seedmen's catalogues are all ready now and the planning of your garden now will enable you to have your lists early.

Look over your tools. There may be some tool that you will need to replace or one that you need to buy in order to secure good and careful work.

Sow in your greenhouse or window garden, cabbages, cauliflower, tomatoes and peppers for outdoor plantage.

Spread over your rhubarb a heavy dressing of well rotted manure.

If you want some extra early rhubarb, place a headless barrel over the hill and place fresh horse manure around the outside of the barrel. A light covering over the top of the barrel will be beneficial.

It is a good plan to prepare for a new rose or two in your flower garden.

Do not uncover the roses until all danger of these spring frosts are over.

It is Pruning Time

The month of March is a capital time to prune all apple, pear, cherry and plum trees, as well as raspberry canes. Every fruit tree needs individual treatment. Owing to the trees being bare of leaves, one is liable to spare the tree too much. One great trouble in getting first-class fruit is in having the limbs too many, thus shading the fruit. Then again varieties differ in the treatment needed. A Spy should be kept spread out as much as possible, particular attention being given to the proper crotching of the limbs. The Spy is liable to form a bad head and when bearing begins, to break off. The Greening spreads too much. Keep it up. A Ben Davis makes an ideal tree easily. The Mann has peculiar willowy branches that are undesirable. The Baldwin makes a fairly well-balanced tree and only needs careful direction. Be careful not to inflict big wounds on the Baldwin, else it will heart-rot easily. Snow Apples, Duchess, McIntosh and Wealthy should be trimmed quite severely as color and size count for much in these early apples.

Pears need considerable wood taken out but as a rule they do not show the bad effects from lack of pruning as much as apples do. Still they are better for the use of the saw.

Cherries should not be pruned too severely. The branches can stand being closer, the principal thing to aim at is for convenience of the pickers. The same is true of plums.

Above all sterilize the pruning saws often. Never saw a live limb after the teeth have entered a diseased one without dipping the saw in hot water.

Heaves

AND HOW TO CURE
—A Standard treatment with years of success back of it to guarantee results is

Fleming's Tonic Heave Remedy

Use it on any case—No matter what else has been tried—and if three boxes fail to relieve, we will Refund full amount paid. Further details in

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Best Ever Used.

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"Little Wireless Phones for the Ears" require no medicine but effectively replace what is lacking or defective in the natural ear drums. They are simple devices, which the wearer easily fits into the ears, where they are invisible. Soft, safe and comfortable.

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TRADE MARK REG. U.S. PAT. OFF.

Reduces Strained, Puffy Ankles, Lymphangitis, Poll Evil, Fistula, Boils, Swellings; Stops Lameness and allays pain. Heals Sores, Cuts, Bruises, Boot Chafes. It is an **ANTISEPTIC AND GERMICIDE**
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Homemakers' Conference

This month we have some fine, sound ideas from women who are every day meeting and solving the problems of motherhood and home-making. How much these heart-to-heart talks may help some one else, we cannot know, but we want more of them. We are also glad to receive copies of addresses given at the Women's Institute meetings throughout the Dominion, and while our space in these columns is too limited to print many of these in full, we can give reviews and extracts from most of them which will be sure to interest every Institute member. We want to publish a column of Household Helps in our April issue, and any ideas which will be of real help to our readers will be most welcome. Upon publication we pay twenty-five cents for each of these.

WHAT INTERESTS THE INSTITUTE

Traveling Libraries, Saving the Kiddies and Banishing Flies, are Among the First Things

By GENEVIEVE

The Women's Institutes of Ontario are taking broader strides than ever this year. We hear less and less about refreshments and programmes, but sociability among the members is not by any means waning; it is growing warmer because of the close sympathy that comes from having a common object of vital interest. The object is not the same with every society in the province but in ninety-nine cases in a hundred it is something worth while—something that is going to directly benefit the homes or the community. The women have little to do with pink teas: they don't meet together to sit with their gloves on. They know what they are there for so they dispense with superficial conventions and go to it.

Just now the medical inspection of public schools seems to be receiving most attention, and it is evident that a few years will see every little red schoolhouse in the province under the protection of competent health authority. A bulletin on this subject is now in the process of preparation and will be ready for distribution by the department shortly. It is interesting to know that the movement is not confined to urban schools, or those surrounding an urban centre. A representative of a branch in an isolated district of New Ontario writes: "We feel that medical school inspection is necessary, especially as some of our schools are situated some miles from a resident doctor, and defects in eyesight, hearing, etc., are not noticed as they would be in a town or village."

Other steps equally practical have been taken, in the interest of child welfare. Several societies have school committees whose duty is to visit the schools and to assist the teachers and trustees in any way they can. Improving grounds and buildings and planning for supervised play are among the important projects undertaken. A great deal of originality and far-sightedness were shown by a district society from whose report the following extract is quoted: "While the members of each branch are doing what local work is best suited to their own needs, it was thought best to take up some definite work in the district, something of interest to every member. We consider the welfare of the child in the home of first importance, and as no child can be either absolutely healthy or comfortable in a home where there are house flies **we have decided to banish them entirely from our district.**" Surely this is worth while.

The traveling libraries prepared by the department are almost over-worked These are splendid collections selected purposely for the Institutes, containing books on fiction, agriculture, domestic science, sociology, philosophy, children's stories and travel; and as a society may have the use of a case of books for three months at one time, the opportunity to get some fresh, first-class reading matter will mean a great deal to the members, and others in the community.

CANNING MEATS

By E. U. J. DOANE

The canning of meats is quite simple and at the same time so convenient, that I wonder that we as housewives do not do more of this, especially the farmers' wives who have their own pork and beef in the winter. They usually have the tenderloin, head-cheese, and sausage, which may all be canned, for one grows tired of so much meat at one season.

Method for canning chicken is as follows:—This will apply to all kinds of meats, as beef, pork, veal, the latter being as nice as chicken.

Cook the chicken the same as for pressed chicken, that is until the meat slips easily from the bones. Season while cooking. Put the meat in the cans with enough of the liquid on to fill up all the spaces. Then place the lids on the cans loosely. Next morning put them in a steam cooker or boiler, and cook three hours. Remove from boiler and place lid on evenly by placing a small board over the top and hammer down tightly.

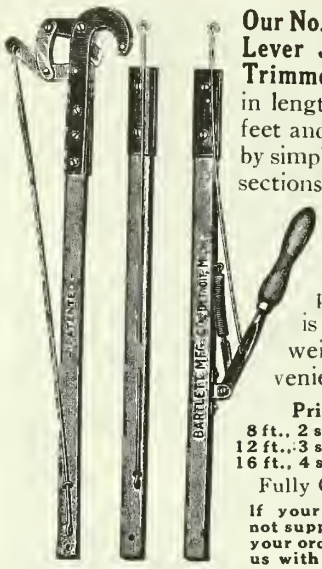
Use a self-sealing can. They are superior to the cans obtained at the canning factory, as they may be used many times.

The glass jars can be used, but not to such an advantage as the tin ones. The whole top coming off the tin can, the meat comes out in a solid roll which can be sliced very thin.

To be doubly sure that the cans are all air-tight run melted paraffine over the top.

I am sure that all ladies who try this will be pleased with the result, and will always have a supply of meat on hand when company slips in unexpectedly.

A PRUNER
THAT REACHES ALL LIMBS



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It cuts a 1 and ⅛ in. limb with perfect ease, is light in weight and convenient to handle.

Price, Each
8 ft., 2 sections, $3.00
12 ft., 3 sections, $3.25
16 ft., 4 sections, $3.50
Fully Guaranteed.

If your dealer cannot supply you, send your orders direct to us with his name.

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DO NOT BUY *a bicycle, pair of tires, lamp, or sundries at any price* until you receive our latest 1914 illustrated catalogue and have learned our special prices and attractive proposition.

ONE CENT is all it will cost you to write us a postal, and catalogue and full information will be sent to you **Free Postpaid** by return mail. **Do not wait.** Write it **now.**

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Yet your best horse is just as liable to develop a Spavin, Ringbone, Splint, Curb or lameness as your poorest!

KENDALL'S SPAVIN CURE

has saved many thousands of dollars in horse flesh by entirely curing these ailments.

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THE BOY'S GARDEN

Some Helpful Hints Gleaned from Experience

By Mrs. ARTHUR M. PURDY

It has, I believe, long been an accepted fact that the children's individual gardens play an important part in implanting and fostering a love of farm life in the growing child's heart, and an intelligent understanding of farm work in the child's mind. Yet, as in all other conditions of childhood, the parents are the real "power behind the throne" and on their tactful, unobtrusive oversight, depends the measure of success or failure of the little garden as an educative feature in the child's life.

When our eldest boy, at the age of three years found an accidentally-dropped bean, sprouting beside the kitchen door step, we assisted the uncertain little hands to "stake it off" carefully out of harm's way. This was the first "boy's garden" of our experience, and they have since run the gauntlet of all stages and varieties, from the daisy transplanted from the field to a tomato can, and the orange seeds sown in a soap-box, to the thrifty, well-tilled rows of potatoes and turnips "as long as Pa's."

The very first idea to impress upon the boys is that they and they only, are responsible for the well-being of the certain piece of land, big or little, that constitutes their garden, from the time it is given over to them to plant, until their crop is gathered. Sometimes it may be necessary, in order to impress this fact upon the little gardener, to let it be entirely wasted by weeds for one year. This treatment will be much more lasting in its effects, than to be continually reminding and nagging the boy, to hoe or weed or water, for if this latter course is pursued, he will soon come to think that unless you are reminding him about it, nothing can be requiring to be done.

It is a great help to their feeling of responsibility to occasionally change work with the boys. The little hands can, under your supervision, weed a few rows of the field vegetables, and in return, at some odd moment, you can give the little garden patch a good deep hoeing between the rows, which is the most difficult task for the short arms of the little lads to accomplish. As we well know, it is never a great deal of trouble to get any child enthusiastic over the planting of his garden. He usually wishes to plant a much larger piece than he can tend. Always, however, insist on his beginning small—very small, and then as he grows older and stronger, or accordingly as he shows a capability of more work and more responsibility, let him plant more. Never lose sight of the fact that, just as the twenty-acre farm well and intelligently worked, puts more money into the pocket of its owner, than the haphazardly tilled two hundred acres, so the child's garden, five-foot square, well tended, is much more beneficial to the training, than a large piece of land, unweeded, unwatered and consequently unthrifty.

Some years, when fall comes, and one little fellow is the proud possessor of a two-dollar bill—receipts from his garden—to add to the tiny bank account, while the happy-go-lucky brother can only show a few small pieces of silver, you will be tempted by the little grieved face, to add to the nickels, something from your own pocket-book. Don't do it, for it might be ruinous to your boy. It will be hard—very hard, but let him take the lesson—no more severe at five than at twenty-five—"if you go without work you must go without food." Talk seriously with the delinquent one, and plan for another year's well-tended garden and a "big" bill to bank. The neglect is not likely to be repeated, particularly if you use good judgment in the size of the garden the boy is allowed to start with in the spring.

Now, just as the child should be religiously let alone in the tending of his garden, so must his ownership be as strictly recognized in the proceeds from it. Never allow a vegetable to be pulled by anyone else, except with the child's permission. It often happens that the little garden, as the result of painstaking, and frequent watering and weeding, will have the first early vegetables. The owner will usually be only too proud to donate them to the family dinners, but the parent who will ruthlessly allow one mess of them to be pulled while the child is absent without pre-arrangement is not deserving of responsibility of the child's training.

I can recall vividly a little incident that happened concerning our boys' gardens, a few years ago. One little fellow having failed to market all his radishes in season, had decided to let them go to seed. Before they were ready to gather, however, an elderly member of our household, seeing them, and not knowing the boy's plans, concluded they were all wasted, so pulled up the entire bunch and fed them to the pigs! The tense muscles, flashing eyes and quivering lips, that bespoke the righteous indignation of that child, when he discovered the robbery and stood accusingly before us, in defence of his violated rights, was a pretty strong proof that the boy has rights, and that they should be respected.

Again I say, don't touch the child's garden stuff without his permission. Buy it and pay him the market price for everything, or let him sell it in an outside market. It may be necessary in the economy of the family, to stipulate that he use the money in the purchasing of useful articles for himself, but let him do it. Don't steel his garden stuff and then give him his boots. Buy his produce and let him pay for his own boots. When this course is followed then does the individual garden of the child help to accomplish a practical business education as well as a satisfied sense of profitable returns from work on the farm.

A Question Drawer for the Women and Girls

Have You Ever Puzzled Over These Things?

Trouble with Stove Pipes

Q.—We have been having a great deal of trouble with a black sooty liquid running down the pipes of our parlor heater. When it dries, it forms a hard shiny crust, filling up the pipes and ruining the carpet around the thimble. Have you any idea what causes this, and can you suggest a remedy?

Mrs. B. E. W., Ont.

A.—If your wood were perfectly dry and the pipe damper never closed you would not have any trouble with the soot and steam forming a liquid in the pipes; but it is scarcely possible to keep the pipe damper always open when using a heater. When the upper part of the pipe becomes cold the rising steam settles, and, mixed with the soot, runs down the pipe. If you will get your tinsmith to cut a hole in a length of pipe, with a sliding piece to close it when desired, and put this pipe above the damper length, you need have no more trouble. When the damper is closed open the slide and the current of air from the room will prevent the steam settling.

Institute Debate

Q.—In our institute we are having a debate next month: "Resolved, That Woman Has Done More Than Man for Civilization." We would be greatly obliged if you would send us some notes on both negative and affirmative sides.

Canadian Girl.

A.—We hope the suggestions reached you in time.

Canadian Literature

Q.—I have been asked to prepare a paper on "Canadian Authors and Their Works" for the monthly meeting of our institute. Could you loan me any material to help in preparing this paper?

A. R. L., Ont.

A.—We hope the clippings sent may be of some use to you. If you are further interested in this subject, you will be glad to know that Professor Reynolds, of the O.A.C., is getting out a book on Canadian literature. This, I believe, is planned purposely as a text-book for his classes, but will be a most interesting work for any Canadian reader.

Baking Powders

Q.—What is the test for a good baking powder, and what is the cause of a baking powder biscuit having a bitter flavor?

Kitchen Chemist.

A.—The only all-round test for a baking powder is in the baking, but it is a sure test, and one that any cook can make. A good baking powder

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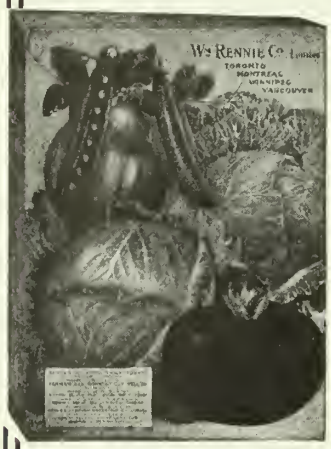

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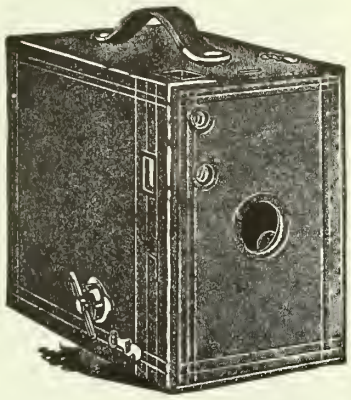

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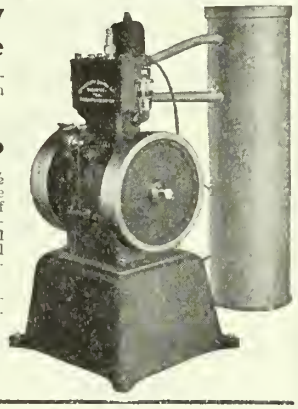

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must: (1) produce a lot of gas. (2) The gas must be given off gradually and not until the mixture is heated, else much of it would be lost before the dough is put into the oven. You can readily see that the test which some demonstrators make by mixing the powder with water to show the amount of gas produced is a fake. (3) The powder must keep well, which makes it necessary to combine a filler like starch with the acid and alkali to keep it dry. (4) The residue left in the food should be harmless, tasteless, and without discoloring effects. (5) The powder should not be expensive.

The alkali used in almost every powder on the market to-day is baking soda; the acids vary. In phosphate powders, mono-calcic phosphate is used. The objection is that the powder doesn't keep well. The alum baking powders are not good, because the acid is burnt alum or alum phosphate, and if any of this is left in the food it is very irritating to the stomach, and decidedly bitter. The tartaric powders are the best. If tartaric acid is used, the action is too quick and much of the gas is wasted, but with cream of tartar this is overcome, and the residue being Rochelle salts, is harmless.

The bitter flavor in a baking powder biscuit is due to too much baking powder, or to alum.

There is no serious danger in using any commercially-prepared baking powder, since the regulation came into force on July 1st, 1912, requiring that a powder must supply 10 per cent. of its weight of available carbondioxide, and that the products of reaction must be harmless. Alum cannot be prohibited, because no injurious effects can be proved. Its strong points are that it is cheap, and that because of the way alum absorbs moisture the powder keeps well.

Truth About Lightning Rods

And How They Should be Installed to be Fully Efficient

By PROF. W. H. DAY

The thorough and explicit information given in Prof. Day's address at the Guleph Winter Fair should reach every farmer in Canada. In a week or two lightning-rod agents will be plying every side-road and concession soliciting orders and rodding buildings, and the farmer should know just how much these are going to be worth as a protection to his property, and how they should be installed to be fully efficient. We regret that space does not permit us to publish the entire address, but have selected those extracts bearing most directly on what the average reader wants to know.—Editor

ARE lightning rods any good? Do they protect buildings against lightning? I shall answer the question and then prove the answer, first from practical, and then from scientific consideration.

Lightning rods, properly installed, are almost absolute protection. Out of every thousand dollars worth of damage done to unrodded buildings by lightning $999 would be saved if those buildings were properly rodded. A pretty strong statement, you say. We realize that it is strong. It has taken thirteen years of investigation to compile data that enable us to make that statement to-day.

The first question generally asked is: "If a rodded building is struck, is it as likely to be burned as an unrodded one which is struck?" In the ten years from 1901 to 1910, reports were received covering 599 buildings that were struck by lightning. Of these 317 were burned, or 53.6 per cent. This percentage is higher than that obtained generally because most of our reports originated in the newspapers, and naturally it is mostly the severe strokes that are thus reported. Amongst that 599 there were only 18 rodded buildings, and of these only three were burned, which is one in six or 16.6 per cent., as against 53.6. Hence, we concluded that an unrodded building if struck is more than three times as likely to be burned as a rodded one. As there seemed to be no object in pursuing this phase further, the original line of investigation was discontinued.

In Ontario Efficiency of Rods is 94½%

From the reports of 18 of these companies, covering more than one-quarter of the Province, it is found that in every 200 farm buildings insured, 42 are rodded, but out of every 200 farm buildings struck by lightning only 3 are rodded—we should expect 42 if the rods were no good.

Or stating it in another way, in every 7,000 unrodded farm buildings insured by these companies 37 were struck by lightning, of which several were burned; but out of every 7,000 rodded ones insured, only 2 were struck (and damaged only)—we should have expected 37 if the rods were no good, hence, in Ontario as rods are installed, an unrodded building is 18½ times as likely to be damaged by lightning as a rodded one is. These results cover all kinds of rods used in Ontario and doubtless include some improper rodding. To prevent damage in 35 cases out of an expectancy of 37 means an efficiency of 94½ per cent.

In Iowa I found that lightning rods show an efficiency of 98.7 per cent., and in Michigan an efficiency of 99.9 per cent.

Electricity Leaks off Points

The laws which govern the principle of electricity in a thunderstorm can be demonstrated through an electrical machine generating large charges. At first condensers were not used on the electrical machines but shortly afterwards they were supplied in the form of leyden jars. A leyden jar is an ordinary glass vessel like a fruit jar, covered with tin foil on the outside, about half

Short uprights (26 in.) on cupolas, long uprights (5 ft.), at their points.

way up. These two tin foils form the two plates of the condenser, and by means of leyden jars very strong charges can be stored up. Here I have an electrical machine consisting of two glass plates, one of which is rotating and the other stationary. Without the leyden jars I can produce a very fine spark which will jump over about two inches of space. When I connect up the two leyden jars which you see, the spark is very much stronger, and sufficient to give one a severe shock. This spark looks exactly like the flash in lightning.

With this machine I can demonstrate another fundamental principle. Here are two sharp wires, one of which I attach to the positive side of the machine and the other to the negative, and I turn the points towards each other. Now we find that the machine does not produce a spark and cannot be made to produce one. Here is a lighted candle which I hold to one of the points, and it is extinguished. There is sufficient wind at each point to blow out the candle. There is only one conclusion possible, viz: that the electricity formed by the machine leaks off these sharp points, the positive gradually neutralizing the negative, and preventing sparks from occurring.

Franklin Proves that Lightning is Electricity

The electric machine was discovered in 1640, but it took one hundred years to perfect it and produce the large sparks, which I have been able to show, and to learn the fundamental principles of electricity. In 1751 Benjamin Franklin, observing the similarity between the lightning flash and the sparks that could be produced by an electrical machine, came to the conclusion that lightning was nothing else than a discharge of electricity. To prove this, he sent a kite up into the clouds as a thunderstorm was approaching. The string which held the kite was connected with an electric key in the laboratory. As soon as the string became wet, electric sparks oc-

Hay fork track connected to rod.

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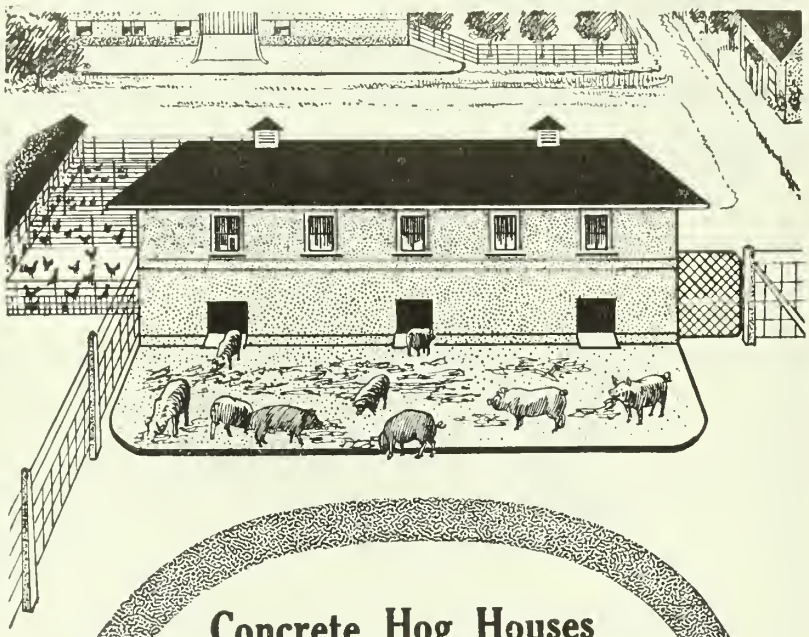

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You know that electricity will follow a copper cable rather than a wooden beam, or boards, to the ground—(where it is trying to get). You know lightning strikes the higher points on a building, the tall trees in a bush.

If you have points above your building for it to strike; if it is going to hit the building, and a conductor to carry it to the moisture in the ground—why isn't it reasonable to suppose it will work?

And it does work.

Prof. Day says: "Lightning Rods, properly installed, are almost absolute protection. Out of every Thousand Dollars' worth of damage done to unrodded buildings by lightning $999 would be saved if those buildings were properly rodded"—and he proved it at the Winter Fair in Guelph last December. Proved it beyond a doubt.

And no building with Universal Rods on has ever been damaged. **If you would like to see our rod drop a card for sample.**

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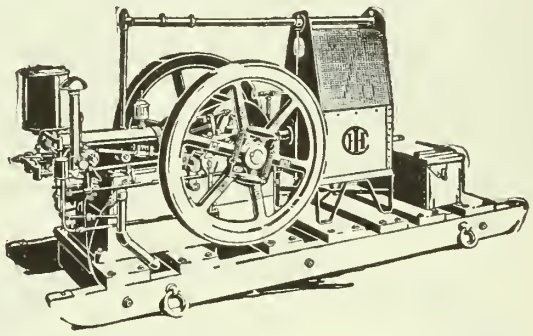

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curred at the key which were in every respect like those produced with the electric machine. Franklin's conclusions then ran something as follows: If lightning is a discharge of electricity, then it must obey the laws of electricity. Hence, it should be possible to prevent lightning in many cases, just as an electric spark can be prevented in this machine by having a pointed wire attached to each side, or if a flash does occur, it should be possible to conduct it to the earth by wire without injury to the building bearing the wire. In other words: If lightning is a discharge of electricity, lightning rods must be a practical possibility.

Once Franklin had reached this conclusion lightning rods began to be installed on the farm buildings through the United States, and later in Canada, but in the early stages lightning rod companies knew very little of the laws of electricity, consequently, were unable to instruct their men as to how buildings should be rodded, and, hence, in many cases, the rods did not produce the protection they were expected to. Besides, numerous swindles in connection with lightning rods were worked off on the farmers, so that in time lightning rods came into much disfavor. However, Sir Wm. Snow Harris, in England, devised a system of lightning protectors for ships, which has practically done away with the one-time tremendous loss caused by lightning to the ships of the British Navy. So effective was his system that the late Queen Victoria bestowed a knighthood and an annuity upon him in recognition of his great service to the Navy, and thereby to the British Empire. Throughout England, Germany, and France, lightning rods became the subject of study, and many buildings, especially costly ones like the great churches and cathedrals, were protected by lightning rods, so that the loss to buildings of this kind by lightning was almost completely overcome. From this the use of lightning rods began to extend to the rural districts with most beneficial results. This extensive use of the lightning rods in Europe, together with continual study in America, has had the effect of drawing public attention again to the subject, and now, as you already know, it has been demonstrated by practical data, gathered from both Canada and the United States that lightning rods are an immense protection when properly installed.

Here is a metallic plate which I attach to the negative side of the machine; to the positive side I attach another plate which hangs a few inches above the first one. Let the bottom plate represent the earth, and the top one the cloud. When I turn the machine the cloud becomes charged with positive and the earth with negative electricity, and by bringing the cloud and earth close enough together you see I can produce sparks, or flashes, which look exactly like the large flashes of lightning we see during thunderstorms.

This article will be continued in our April issue.—Editor.

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Your fingers do not touch the soap. You grasp it by the metal cap in which the stick is firmly fastened, rub it gently over the face, which has previously been moistened, and then return the Shaving Stick to its nickeled container.

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APRIL 1914

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MACLEAN PUBLISHING COMPANY LIMITED

TORONTO MONTREAL WINNIPEG

A Royal Beauty Secret *from* Ancient Egypt

READ THIS TRANSLATION.

(1) *As for her who desires beauty.*

(2) *She is wont to anoint her limbs with oil of palm and oil of olives.*

(3) *There cause to flourish these ointments the skin.*

(4) *As for the oil of palm and oil of olives, there is not their like for revivifying, making sound and purifying the skin.*

EXPLANATORY NOTE.

This is a translation of the story of palm and olive oils written in the hieroglyphics of 3,000 years ago.

The characters and the translation are correctly shown according to the present-day knowledge of the subject.

Read hieroglyphics down, and to the right.

To-day one of ancient Egypt's lost arts is becoming universal knowledge. Apparently Nitocris, Hatasu, Cleopatra, and other queens of Egypt, all used Palm and Olive Oils at their daily toilets.

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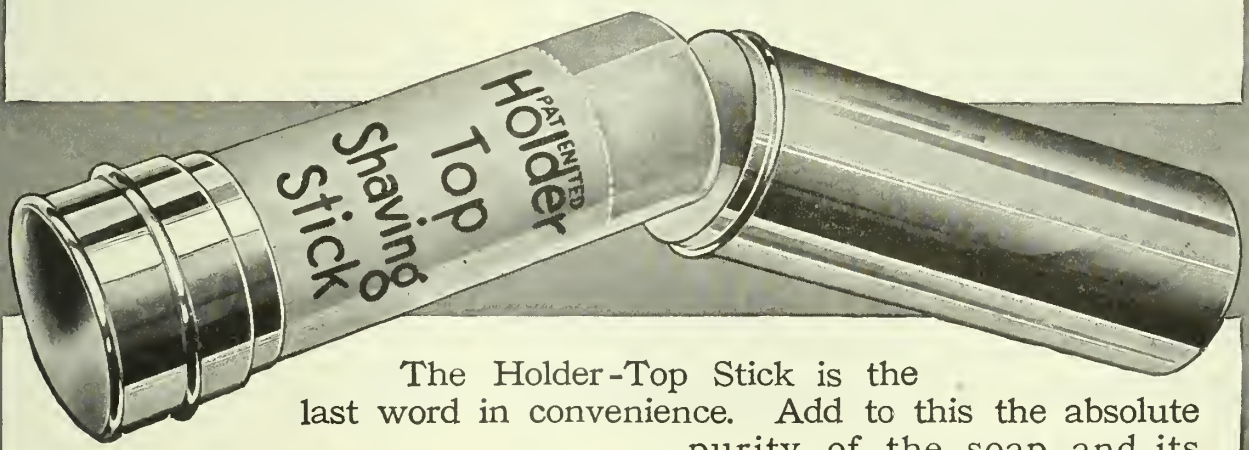

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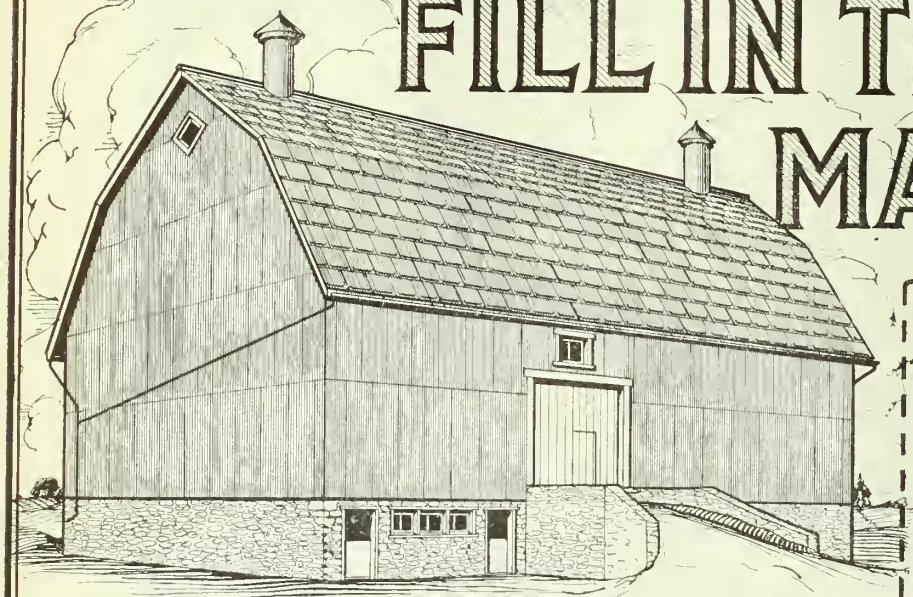

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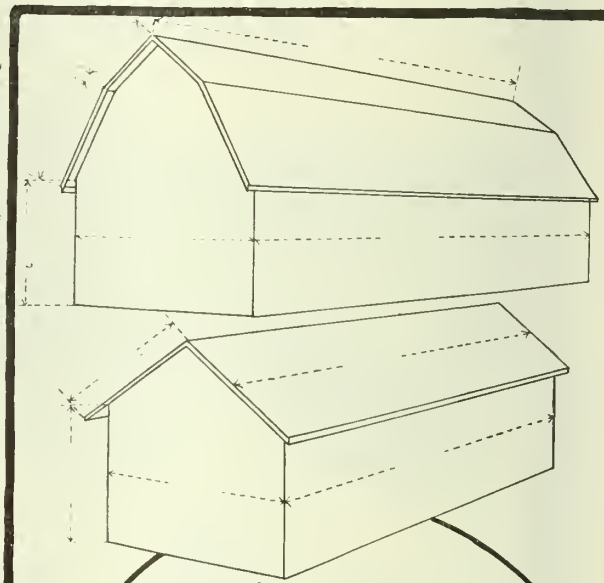

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FARMER'S MAGAZINE

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APRIL, 1914

F. M. CHAPMAN, B.A., Man. Editor
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J. I. CODDINGTON, Ph.B., Cir. Manager

May Farmer's Full of Interest

Some Things About The Month Ahead.

We receive daily from readers all over the Dominion, all sorts of requests. These we are glad to help as far as we can. A particularly large number of inquiries came in asking for the Angora Goat breeders following the Goat story. Many young men are seeking information in livestock and poultry farming. The way the articles in each issue of "Farmer's" go into the whole question is most gratifying to these readers. The contents of the April number will carry further this policy of giving our readers the very information and encouragement in farming that is needed.

The question asked in the April number will carry the first answer to this. Can $2 a bushel be made out of wheat by feeding it?

A farm woman goes into the whole question of turkey rearing and gives the farmer some valuable hints.

The building of a prairie machine shed is well told and illustrated.

The way the students of farming have taken hold of the Sunny Province's new agricultural schools is well handled by a well-known writer.

The way the auto can be of service to the farmer is the subject of an interesting article in this issue.

But it would not do to announce the leader of this issue. Other topics on Poultry, Milking Breeds, Bees, Horses, Hops in B.C., Strawberries, Orchards, and Gardens, will carry dollars of information. The illustrations cost big sums. The covers are the best that any Canadian farm paper carries. In fact "Farmer's" is a leader in the best for the farmer.

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The FARMER'S MAGAZINE

Vol. VII TORONTO, APRIL 1914 No. 6

$1,000 Cheques From Hens

The Hen that Lays the Golden Egg is not Killed, but Encouraged by the Up-to-date Poultry Man

By LOUIS NEILSON CLARK

This would make any rooster crow.

It is said that sooner or later in the life of every man there comes a time when it seems expedient to "go into poultry." These ventures do not always prove successful, for reasons which the writer discusses in this article. Mr. Clark owns one of the largest and best-paying poultry plants in Canada, at Port Hope, Ontario, so his ideas are not mere visions. The present market outlook offers big possibilities for the poultry industry in Canada, and anyone with a fondness for birds and a willingness to learn the best methods need not fear to invest in a few clucking hens or an incubator this spring.

The industrious and unfortunate goose in Æsop's Fables that laid an egg of pure gold each day for the benefit of its owner, until the man became so greedy that he could not wait for her to lay one egg at a time, and put an end to her useful existence, was only an amateur at the business of producing wealth, when compared to the wealth of white eggs and of brown eggs and of yellow eggs produced by the hens of Canada.

In the year 1911, the value of the poultry in Canada was estimated at $15,047,009, their being 29,555,728 hens and chickens; the approximate number of eggs produced in this year was 123,319,378 dozen, having a value of $23,501,173 or $64,387 a day, and it would surely take a good many golden eggs to bring this price. The poultry industry of Canada is, I believe, different from that of any other land, in that almost all the hens, or producers of eggs, are to be found on the farms—twenty on one farm, thirty on another and a hundred on a third, but very few farms have over a hundred laying hens, and the number of large poultry farms that keep a thousand or more layers can be counted on the fingers of one hand, as far as I am informed. In the United States there are over five hundred farms, keeping one thousand hens or more, several farms keeping tens of thousands of hens, and one farm that I know of that winters over one hundred thousand laying hens. Conditions are much the same in England, France, Germany, and other European countries, the industry in Russia and China being more like that in Canada—a few hens on every farm and not many large poultry farms.

Big Price for Eggs

Much has been said and written this winter about the exorbitant price of eggs, and that they brought a good price no one will deny. New-laid eggs sold retail in Montreal early in December last, at 80 cents and 85 cents a dozen, and in Toronto at 75 cents and 80 cents a dozen, while at the same time they were selling at New York, which is undoubtedly the highest market in the United States, at 75 cents, at Boston the price was 70 cents, Philadelphia and Washington 65 cents, and Pittsburgh 60 cents.

"With plentiful feed, and at a fairly reasonable price," the question is asked, "Why should the price of eggs in our Canadian cities be higher than at New York and other American centres?" The answer is evident, first because the severe winter weather naturally cuts down the egg production, practically causing the hens in the ordinary farm flock to stop laying, and secondly, because, as stated above there are so few large poultry farms that make a specialty of winter egg production. Both causes create so great a discrepancy between the supply and the demand that the price soars. This is the case only in the fall and early winter, for the reason that the older hens generally to be found in the farm flock, have finished moulting and are producing

The poultry plant at the Nova Scotia Agricultural College, Truro.

again by the middle of January and also the late-hatched pullets on the farm are beginning to lay.

$1,000 from 1,000 Hens

It is for this reason that the poultry-farm, particularly the one that specializes as an "egg-farm," can be made so profitable an undertaking. If a farm winters one thousand hens, and every hen can be made to lay ten eggs a month in October, November and December, the clear profit over and above cost of feed and labor (but making no charge for interest or investment) will be fully $1,000 for the three months on 1,000 hens. It is a fact that it is almost impossible to get these results, the great difficulty being to get the hens to keep up a 30 per cent. egg-production, or ten eggs a month, for these three months. The rest is easy if this can be done, and it is the object of this article to show a few of the things that are absolutely necessary to success and a few of the things that lead to failure.

It must be remembered that what follows has reference only to large flocks of poultry on poultry-farms. It is my belief that the man who keeps five hens, or a dozen hens in the back yard, feeds them the scraps from his house, and "plays around with them" in his spare time has a better chance of getting a big egg production than the most scientific poultryman with large flocks, handicapped by the necessity of treating fifty or a hundred hens as a unit, and being forced to consider that each hen in his flock is exactly like all the rest, and requires the same care and feed, which supposition is entirely wrong.

The first and most important consideration in producing winter eggs is that your layers shall be early hatched pullets. The year-old, or older hen will not do more than pay for her feed and care in the early winter—when kept in large flocks. I always keep over a large number of yearling hens to use as breeders the following spring, and I am very well satisfied if they pay their expenses from October 1 to February 1, after which they commence making a profit. Pullets, if bred of an early maturing, laying strain, will commence laying in from four to six months, and your aim should be to hatch them at a time that will bring them on to lay late in September. If they get well started in October, nothing will stop them during the winter, provided they have proper care. If they are not hatched in time to start laying before cold weather there will be trouble in getting them started before January, but on the other hand too early hatching is quite as disastrous. As an example, I hatched four hundred White Leghorn pullets last year on April 11. They commenced laying in August and laid heavily until late in November, when they started to moult like old hens, with the result that I got very few eggs from them in December when the price was highest.

These pullets came from a heavy-laying strain which means one thing and one thing only—an early maturing strain. Many people have asked me if it is not possible to get a strain that matures too early. I do not believe such a thing is possible, provided the strain is kept vigorous and of a good size. If a strain matures early and there is danger of the pullets moulting in the fall, one has only to hatch them a little later, which gives the very great advantage of better weather.

Getting Winter Eggs

This brings us to the second important consideration in producing winter eggs—to have pullets of a laying strain. The average number of eggs produced in one year of all the hens in Canada is put at 98 which is somewhat different from the record of the cross-bred hen owned by the Oregon Experiment Station, which laid 303 eggs from November 13, 1912, to November 12, 1913; or even comparing this to a 200-egg strain (and 200-egg strains actually do exist), the difference as between a loss in poultry keeping and a large profit can readily be seen. A laying strain in poultry bears the same relation to an ordinary hen, that the record milk-producing cow bears to the cow of the ordinary herd, or that a highly intelligent, efficient man bears to the ordinary run of plodding humanity. There is the difference, the hen and cow can by careful selective breeding be made vastly more efficient in a few generations, whereas up to present the breeding of man must be a somewhat haphazard affair. At Cornell University, they have a strain of White Leghorns that is as near a 200-egg strain as has yet been produced, and at the Ontario Agricultural College, and the University of Maine, they have strains of Barred Plymouth Rocks that produce many individuals that lay over 200 eggs in a year. I do not suppose that in any of these strains every individual lays 200 eggs or more, but so many of them do, and all of them lay so many more eggs than the ordinary flock, that it will pay any poultryman, whether he be a beginner, or a so-called expert, to get stock of these or other equally good strains.

Taking thirty-five cents a dozen on the average net price of eggs through the year, and this is none too high a price as prices have run during the past several years—it will take at the outside only five and one-half dozen eggs a year from a hen to pay for her feed and care. Taking it in this way, if a hen lays 98 eggs in a year, the net profit on each hen will be 95 cents, while if she lays, say, 180 eggs the net profit will be $3.32, and it is no exaggeration to say that if one has a flock of pullets that will average 180 eggs a year a profit of fully this amount will be realized. Probably more, for pullets that average this

Taking thirty-five cents a dozen on the average net price of eggs throughout the year, and this is none too high a price as prices have run during the past several years,—it will take at the outside only five and one-half dozen eggs a year from a hen to pay for her feed and care. Taking it in this way, if a hen lays 98 eggs in a year, the net profit on each hen will be $0.95, while if she lays, say, 180 eggs the net profit will be $3.32, and it is no exaggeration to say that if one has a flock of pullets that will average 180 eggs a year a profit of fully this amount will be realized. Probably more, for pullets that average this number of eggs, always lay well in the winter, so your average price per dozen will amount to thirty-five cents.

General view of winter laying houses, Oldham Farm, Port Hope, Ontario.

The laying houses should be warmly built; well ventilated, dry, light and sunny.

number of eggs, always lay well in the winter, so your average price per dozen will amount to thirty-five cents.

Value of Pullets

If one has pullets, hatched at the right time, of a heavy-laying strain, the only other thing that is necessary is that they shall be properly fed, housed, and cared for, and anyone who will go about it intelligently, giving thought and patience and attention and using a reasonable amount of common sense, should be able to succeed in this. The laying houses should be warmly built on the north side, facing the south; should be well ventilated, but free from draughts; dry and light and sunny. The feed should be of the very best quality, and the hens should be given plenty of it, care being taken that they are kept busy and active as large a part of the day as possible. The houses should be kept scrupulously clean, and both houses and birds free of insects at all times. Fresh, clean water or milk should be always before them, this being very important, as dirty drinking vessels are the greatest cause of the spread of disease. Also a very large part of the egg is of water, and eggs cannot be made without water any more than they can be made without a plentiful supply of food of the right kind. All this sounds very easy, but if anyone who has never kept poultry, thinks it is, let him try!

I have thus far given a very rosy view of the poultry business, but I feel that I must add a few words of warning. As everyone knows, where there is one man who makes a success of poultry-farming, there are several who make dismal failures. Usually, when a poultry farm is successful, it is very successful and a big money-maker, but on the other hand it can be a mighty expensive failure, particularly to the man who has gone in on a large scale at the start. I suppose the chief reason for the failures, is this —so many of the men who start in the business are city men, or know nothing about poultry. If these men went in for general farming their failures would probably be as complete, the trouble being that most men who know nothing of these "professions," if I may so call them, suppose that farming in any of its branches takes no experience, or particular ability, but think that surely if a farmer can do the work, they with, as they consider, their superior education and intelligence, can do as well, or better.

Nothing can be more mistaken than this idea—I consider that to-day, farming in all its branches is a profession requiring as great an amount of experience, and native ability as any other, in order that a real success may be achieved. By no means all city men who go in for farming, fail.

We all know many cases where they have been very successful indeed, but I feel certain that those, who, knowing nothing about the business in the beginning, have succeeded have been willing to learn, and have studied the thing out as carefully and painstakingly as one would study law or medicine. With all the assistance we can get from the Department of Agriculture of Canada and the United States, and the many useful bulletins published by them, and by the universities and experiment stations, we have no excuse for not getting the technical knowledge, and keeping up with the times as well. So many people have asked me what I consider the best book on poultry keeping that this might be a good place to say that "Method of Poultry Management at the Maine Agricultural Experiment Station," by Raymond Pearl, Ph.D., and sold by the U.S. Department of Agriculture for 15 cents is the best and most helpful bulletin I have ever seen.

To those who may intend becoming poultry farmers (and the editor wants this article to inspire others to that purpose) I would give this advice: Get good stock to start with; do not start in too big a way in the beginning, until you can see how you are coming out; be sure that you have sufficient capital not only to start your plant, but also to see you through the first year, and perhaps the second also, without any great profit. Don't be afraid to ask questions and don't be afraid to learn. There are many unattractive features in the "chicken-business." It ties the owner down year in and year out, as is always the case where any live stock is handled. It is a good deal of a gamble, and there is a certain amount of worry and anxiety continually, and added to these there is a never-ending round of good hard work. In the spring of the year, to attend to the incubators and attend to the little chicks, to see to the wrapping and packing the hatching eggs, and to packing the market eggs, and that the hens are not neglected and that the crops are put in—if a farm is run in connection with the poultry plant, these and a hundred other things are enough to drive one to distraction, and it surely is no place for a lazy man.

The portable houses set in a field or orchard offer ideal summer quarters for the young stock.

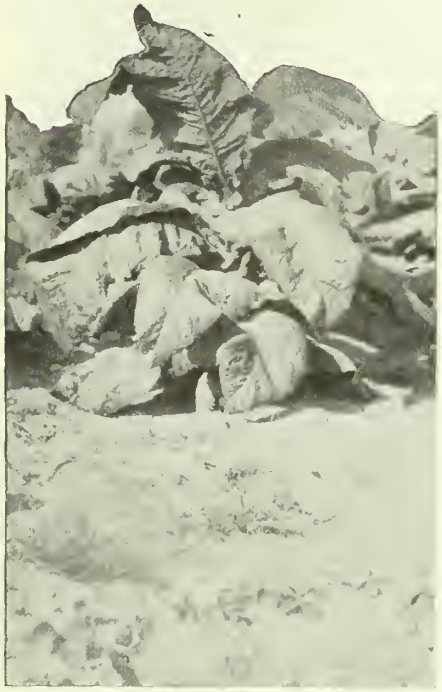
On the other hand, it is a very pleasant business in many ways. There is absolute independence, and a healthy outdoor life. The poultry-farmer never has to look for a market (for eggs anyway) the market generally looks for him as long as he supplies a strictly fresh article and packs in an attractive way. It is also interesting—to us it is intensely interesting, every part of it—the breeding of a laying-strain, the incubation of the eggs and the rearing of the chicks, and then as the climax to the year's work, the getting of the first pullets' eggs in the fall, and the beginning of the record that will show whether this year the hens of the strain are producing a few more eggs than the year before and are a little healthier, and a little more vigorous, and a little nicer to look at.

And last, but not least (in the minds of most of us) it is a business that will give any man a living and a good living if he will go about it right, for if he treats the "biddies" as they have a right to expect, they will return the favor with interest.

The Newest Big Business

Making Big Dividends from the Walker Farm Whilst Paying Big Wages

By JUSTUS MILLER



A thriving tobacco plant.

There seems to be a little scepticism running loose in the country with regard to big farming and business methods of farm management. Most of this has evidently sprung from the high-sounding but unsteadily-grounded theories of men with more vision than experience. In this story, though we have the facts about a farming success due to the application of business principles and the figures are convincing. While the work here is carried on on a large scale, the reader will find some valuable economic suggestions that may be followed even on a small place.

Not so long ago a young chap hailing from Wisconsin stepped off the train at Walkerville, Ontario. He was a close-knit, powerful-limbed boy with a determined mouth and a shrewd Yankee sense of business. That was twelve years ago. To-day he is managing the largest farm in Ontario, and has proven that big farming pays in this conservative old Province of small freehold farms.

"I was born in Wisconsin just thirty-six years ago," explained J. C. Biggar. "When I was a lad, dad got the Iowa fever and moved us out there on a half-section of land. After three wheat failures he decided after all that Wisconsin was a pretty comfortable sort of a place to live in.

"So we moved back on a twenty-acre farm, which I managed later on while dad handled contracts as a builder. He wanted me to study medicine or law, but we couldn't see eye to eye on that proposition. Eventually I compromised by taking a science course.

"But one year at college satisfied me that I would never be a professional man. I wanted the freedom of broad acres. So my next step was to take a course in agriculture at the Wisconsin State University.

"While at this institution I noticed an advertisement by a millionaire, who owned a large farm at Walkerville, Ontario, just across the river from Detroit. A manager was wanted for a tobacco farm that had not succeeded very well up to that time. As I had had considerable experience with the crop I applied for the position, and was accepted.

"I was just a boy then, not twenty-five years old, and I found a mighty big proposition awaiting me, I can tell you In the first place the farm was not paying a profit and in the second place farming on a very large scale is not followed in Ontario. To make matters worse, I found the large farm divided into departments, each controlled by a foreman who was entirely responsible for his division. There was no general manager and consequently the foremen had each other by the ears constantly. To finally complicate matters I found myself looked upon with ridicule by them all as a boy fresh from an agricultural college."

Growing Into Larger Things

From this small beginning Mr. Biggar has steadily advanced himself. He saw at once and very clearly the opportunities that would open to the right man. He longed for an active out-door life, and here lay a huge plant covering hundreds of acres and capitalized at hundreds of thousands of dollars right at his feet. His rapid promotion from one, and at that time small and rather doubtful, department to the position of general manager furnishes an absorbing tale alike of the doors that lie open to young men with an agricultural training, and of the value of skilful farm management when applied by an earnest worker.

"I made my tobacco pay that year and the next," continued Mr. Biggar. "Then the owner, Mr. Walker, approached me on a sugar beet proposition. I agreed to undertake if he would be satisfied with one paying crop. I didn't like the proposition, but he was interested in the beet sugar industry, so I determined to make it go somehow.

"Well, to shorten the tale I did show a profit and a pretty good profit, too. Then the scope of my work was widened until eventually the entire farm was placed under one management and I was made general manager.

Tobacco hanging in the barn for curing.

"In the meantime I had decided to make the task of bringing this big system upon a paying basis, my life's work. But I wanted to safeguard myself, too. So I went to the owner and asked that I might receive a share in what profits I could make. This was done readily enough, for the farm had never paid, I guess he thought it was an easy proposition.

"Well, I have been here twelve years now, and if anything happens I needn't work any longer. I have two small farms of my own, too, which pay good dividends; and this isn't because I'm a very clever man, either. It is just a simple question of business. I manage this farm just as any manager would handle an industrial plant capitalized at nearly half a million dollars.

"Altogether, we have 2,500 acres. We have a young orchard of eighty acres just set out and a flock of poultry of fifteen hundred birds. We grow about two hundred and fifty acres of tobacco and about six hundred acres of corn. On the same land, though not under my management, 2,800 steers are fattened. and we have a dairy of 187 cows.

"We don't make a practice of giving figures, but this farm I may say has paid very well, which is more than can be said of most millionaires' ranches. I don't mind saying we have made a net profit of $50,000 after all money paid for labor and management had been deducted, 6 per cent. interest upon all capital invested in land, stock, wages and implements, 8 per cent. upon building

and from 33 to 12½ per cent. depreciation upon implements. There are not many small farms upon which a mixed system is operated that can show more profit per acre than this, are there?"

This success is due, as Mr. Biggar has said, to the application of business principles to the work. One finds that feature everywhere in each department. Everything is systematized. Percentages and ratios and calculations meet one at every turn. The cost of hauling, of field operations, of keeping each individual dairy cow is calculated to a nicety. The profit of everything is accurately shown. "The maximum profit with the minimum expense," is Mr. Biggar's slogan.

"Our buildings, you will observe, are not show barns," explained the manager. "Everything is put up as cheaply as possible. We considered utility only. Where possible we have built the barns together, thus making one wall less.

"Our fittings and stable appliances are all installed on this principle. Notice those creosote blocks in the cow-stables? I got that idea in Toledo while looking over a big horse-dealer's premises. They are cheap and most durable."

However, this plan is not carried out in a penny-wise pound-foolish manner. Every building is designed to serve the comfort and health of the animals. Efforts are made in every department to produce the very finest product. "The best crop possible" is one of the soundest of Mr. Biggar's mottoes. He has succeeded through it in establishing and in holding the most profitable markets for his products in Ontario.

Everywhere the efforts made to produce the best are shown. In the stables the cows are disinfected, and milked under exceptionally sanitary conditions. The total herd is tested each year with the tuberculin test, and there were only two re-acters this year. The bacteria content under official test showed from 2,500 to 7,500, which are reasonably low figures.

Last fall a trip was taken by the manager to the corn belt of the United States for the purpose of seeking a perfect drying house for seed corn. He didn't quite succeed, but with the data secured built one of his own design.

The tobacco is particularly well cared for. Upon this farm the nature of "tobacco poisoning" was first discovered. Experiments are under way each year in this department, as they are also in the seed corn division.

"I cannot too greatly emphasize this fact," said Mr. Biggar. "It always pays to produce the best. It finds a market every time and it raises the price of your produce in the long run. The tobacco companies pay us a higher price now than they do to the neighboring farmers, just because we care for the crop more carefully."

The type found on the Walker farm. Holstein calf bought for $160 when a few days old.

Now this manager is not a gambler. He knows that the only fellow who gets something for nothing in this world is the chap who goes out after trouble. So he has no faith in the philosophy of some men who seem to believe that the soil is inexhaustible. To take something away, never to put it back and still to have it, is a problem he has never tried to solve. Hence, perhaps in all Canada there is no farm so thoroughly fertilized as is the great Walker Farm. And the keeping of live stock is the secret.

Feeding 2800 Steers

Practically all the grain grown is fed to animals. All the barley sold for malting purposes is exchanged for feeding barley, and all seed grain sold to the neighboring farmers is similarly exchanged. The manure from the various stables is taken out and applied to the fields each day.

In connection with the fat cattle barns a different system is employed. These animals, 2,800 in number, are shut in from fall to spring for about nine months. All the manure is run through trenches to a tank in each barn. Here it is strained through two screens and is conducted by cast iron pipes to a great central tank thirty-two feet deep and sixty-four feet in diameter. In this tank a huge agitator is kept constantly moving and the liquid manure is pumped upon the tobacco fields, 250 acres in area, via cast-iron pipes and hydrants. Upon these fields dykes are constructed so that the fertilizer is held to a depth of three feet. The section treated each year is left to dry for a period of one year, after which time a residue of about four inches remains. It is then worked very finely for the tobacco, and is not fertilized again for five years.

"A most important feature of the work here has been our drainage operations with clay tile," remarked the manager. "I have found that nothing pays me better than this, but, of course, our land is very low. I have just finished tiling 2,000 acres. This fall I had 85,000 4-inch tile laid, with a 22-inch main. I had forty men working all season. I have not a smaller tile than 4-inch, and would under no conditions instal smaller than 3-inch."

Concerning labor, the Walker farm seems particularly fortunate. Detroit is just across the river and during the summer an abundance of factory hands may be secured through the rush months. All are paid every two weeks and are at liberty to go when it pleases them. It is so arranged that the men average ten hours a day and are paid extra for any Sunday labor. The old hands are paid more than new ones, and as nearly as possible each is paid according to his worth. Prices range from $1.50 a day upwards, with such privileges as free rent, milk at special rates, etc.

The sub-foremen receive a straight salary of $1,200 a year with a proportion of the profit of their departments. This year the salary and commission will run in some sections well up to $5,000. In short, the same principles are employed in hiring, paying, and firing men that one finds in an urban industry. Altogether there are over 100 men employed in different capacities upon this farm.

The question of power is a most important one, and has caused endless figuring and calculation. For hauling purposes horses are used entirely, sixty heavy teams being employed besides light driving horses.

"We find that heavy motors are not adapted to this kind of work," argued the manager. "In theory they seem all right, but in practice they fall down. I remember once a heavy traction engine started on a trip a few miles distant early Monday morning for twenty-five tons of hay. On Saturday night it crept in with exactly one ton. Bridges had broken, and

An education in big farming. Four of the Walker silos.

trucks had skidded and tipped, until one would have thought the Black One himself had engineered that outfit. After that we decided that our farm and the surrounding country didn't call for that form of power.

"Our plowing is done partly with horses and partly with oil and gasoline tractors. We have three of the latter. One is a six-furrow machine, but is too heavy. The other two throw three furrows each, and are much to be preferred. These are capable of plowing twelve acres a day each, and can turn in thirty feet. They cost $1,400 and displace about twelve teams on our land. The whole thing in buying a tractor is to get a light one. We try above all else to keep down weight. Our tractors are capable of turning over forty acres a day, altogether.

"We do not find the cost of long hauls prohibitive on this farm because we are well equipped. We furnish heavy teams and strong outfits capable of moving heavy loads. Then we have our barns placed in different sections, and the houses of the laborers built convenient to them."

Has Big Farming Come to Stay?

In discussing the large farming versus small farming proposition, Mr. Biggar suggested that several factors must be considered. Capital must be available, he explained, to make extensions. With a flexible supply, one great hindrance is removed, for improvements can be made and paying transactions conducted without which failure might occur.

"But location is more important still," concluded he. "We have a wonderful advantage here with the cities of Windsor and Walkerville right at our doors to consume our total milk supply. Then we have splendid shipping facilities; while our proximity to these cities and to Detroit makes it easy to secure an adequate supply of labor. Unless this were so, the big farm proposition might not look so attractive."

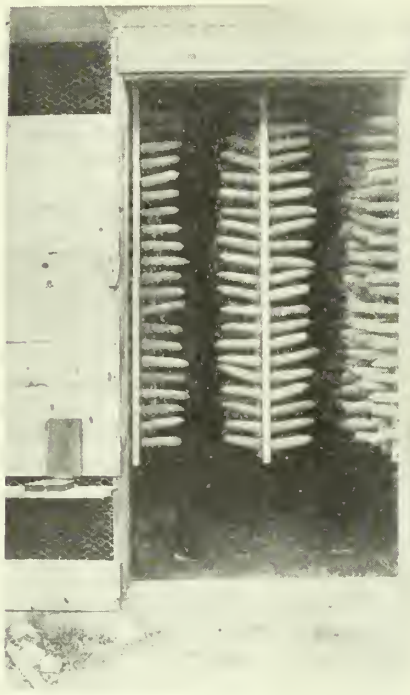
Within each department the same close figuring of profits and loss occurs; the same fine calculations regarding the cost of each operation.

The dairy embraces 500 acres of land, and upon them 187 milking cows are maintained the year around, together with the young stuff to build up the herd. There are two large barns and six 30 ft. x 20 ft. silos in connection with this department. A foreman and thirty-two men devote all their time to this end.

The cattle are never turned out to pasture during the period of lactation. The feed consists for the most part of corn silage and alfalfa, with a meal ration of equal parts by weight of corn, barley, and oats, with a little oil cake added. About 250 to 275 acres are given to alfalfa-growing from which three cuttings have given an annual yield of 4.8 tons to the acre. It is grown three years before being turned under. The corn used for ensilage purposes consists partly of Golden Glow (Wisconsin No. 12) and Silver King (Wisconsin No. 7). These are both dent corns, the former being about ten days the earlier. This permits silo-filling operations to extend over a longer period while the corn is in prime condition.

The quantity of feed is regulated by the breed, size and production of the cows. The large ones are fed from six to eight pounds of meal and all the roughage they can consume. Holsteins are favored in the herd, being the larger producers, but as the milk is all sold in city trade, a large number of Jerseys and Guernseys are kept, "to give color to the milk" as the manager explained with a twinkle in his eye.

The Holsteins are mostly well-bred grades and are mated to pure bred bulls. The Jerseys and Guernseys are crossed, as a large cow with more capacity is secured, which gives a flow of very rich milk. All bulls raised are pure-bred, entered in the advanced registry. The herd is built up from young stuff right on the farm, the calves of the best cows being raised. The standard of performance for this herd is 8,000 pounds. If any give less than this as three or four-year-olds, they are sold off. This year the entire herd has averaged 10,000 pounds.



Seed corn drying house—ventilators open.

"It is upon the quality of our product that we pride ourselves the most," explained Mr. Biggar. "Quality, quality, that is the road to success. Each cow is chained so she can't lie down during the milking hour, and we are careful to have no dust in the stables at that time. The cow's udder is then disinfected and wiped with a damp cloth and the milk is drawn by hand into a narrow-mouthed pail. After milking each cow our men wash their hands before proceeding to the others. The milk is then poured into an over-head receiving tank through a cloth strainer. From there it is passed through another strainer over an aerator, and through a third strainer into the bottling machine. All our milk vessels and bottles are thoroughly disinfected, as are also our stables. We whitewash the buildings twice a year and have them ventilated by the King system.

"This year our milk has given an average test of less than 7,500. It is quite a usual thing now for doctors to commend our milk for infants and patients. In fact, we have very little competition. Indeed, we are planning right now to move our dairy farm on the west block of 900 acres and to increase our herd to 400 milking cows."

The grain farm consists of several hundred acres. Over 600 are planted to corn. This is the most important crop, and takes up most of the time of the grain foreman and his squad of fifteen men. All the corn grown for the grain is shelled and ground by electric energy, which is the most satisfactory form of power, where it can be used, the manager believes.

Two interesting features in connection with this crop is the experimental seed plots and an experimental drying house.

There are six of the former and they are placed considerable distances from each other, and from other corn to prevent cross-fertilization. Each year new varieties are tested for yield, maturity, and quality, and old varieties are bred to standardize uniformity, type, maturity, etc.

"Note this drying house for our seed corn," advised Mr. Biggar. "You will not see another just like it. After a trip through the corn belt last fall, I had it built, to suit myself. It gives perfect ventilation and the corn is drying very satisfactorily. Each ear is placed upon a spike driven in a pole which is hung from the ceiling so that no two ears touch throughout the whole house.

"The seed corn industry is a very important one with us and is sure to become greater. We select the earlier maturing ears, and this year have 4,000 bushels for sale. We intend to increase our acreage in the near future to grow 15,000 bushels. We sell at $3.00 a bushel on the ear. Our two principal varieties are Wisconsin No. 12 and Wisconsin No. 7 The former is a comparatively new corn we are introducing into Canada. It is about ten days earlier than the latter well-known variety, and considering its earliness of maturity gives a very good yield."

The Tobacco Poison Bogey

"Our tobacco is one of the best paying crops. Altogether we have 250 acres in that section. Just at present we are trying to develop a resistant strain to overcome the fungus attacking the root, which used to be called 'tobacco poisoning.' We were the first to discover, I think, that sterilized soil would never be subjected to this disease. We have made a practice for some years of steaming the soil in the cold frames.

"Some plants will be unaffected in a diseased area, and we hope from these to secure a resistant strain. I don't see why we can't, for the same thing has

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The Mark of the Golden Hoof

Managing a Small Flock of Sheep on an Eastern Farm

By DONALD C. EWING

At this, the lambing season, attention to the sheep-fold will occupy the greater part of the farmer's time and interest. The calling of the shepherd has for centuries been dignified by art and story, but it is only just coming to its own as a business proposition, not only among live-stock specialists, but on the mixed farm where a small flock ought to be accommodated. It is to this particular line that the writer has confined his remarks in this article. Every farmer will find it interesting reading, full of ideas and helpful suggestions, that years of experience have discovered and proved. The writer is one of the best farmers in Canada.

They nearly pay for their pasture by keeping it free from rubbish.

ON THE farms of the pioneer period, not only in Ontario, but throughout all Eastern Canada, a small flock of sheep was considered a necessity. They were kept not only for the money they made for the farmer, but also because they yielded two very necessary products to the farmer's family — wool and meat. In the very early days the household was clothed from the farm flock — the home-grown wool, washed, carded by hand into soft, fluffy "bats" spun into yarn on the old-fashioned spinning - wheel, and woven into cloth by some local weaver, on a hand-loom, providing practically all the clothing for the family, from their hand-knitted stockings to the suits of homespun they wore to church on Sunday. At a little later period the wool was taken to some local woolen mill, of which at that time, before combines and mergers had centralized industry, there were many scattered all through the country. There it was exchanged for yarn, blankets and cloth, in much the same manner as wheat is exchanged for flour in many places. Only the surplus was sold, and it was considered quite as necessary for the farm to grow its own supply of wool, as that it should produce its own supply of potatoes.

Also the farm flock provided no inconsiderable part of the meat supply. In those days, before the advent of the beef-ring, or even the country butcher, salt pork formed, with ceaseless monotony, the farmer's diet during the summer months, when it was too hot to keep any considerable supply of fresh meat. We can easily understand how eagerly, under these circumstances, the cool weather of the fall was looked for, when it became possible to change from a diet of pork to one of lamb. Lamb, in fact, formed the meat diet of the household for these two or three months of the fall when the weather was still too warm to risk the keeping of so large a quantity of fresh meat as a carcase, or even a quarter of beef. That family who had no flock to fall back on fared rather badly for its meat diet.

Passing of the Farm Flocks

Presently, however, these conditions, which had made nearly every farmer a keeper of sheep to a greater or less extent, ceased. In the new complexities of a modern life, the spinning-wheel and the hand-cards were relegated to the garret. Centralization of industry did away, to a very great extent, with the local woolen mill. The farmer's family no longer wore the wool produced from their own flock, but instead used store goods, the product of distant factories in great cities, the wool for which had perhaps been gathered almost from the four corners of the earth, and incidentally had also likely been adulterated with a fair proportion of shoddy. At the same time that the farm flock became unnecessary as an immediate source of clothing, the advent of the beef-ring and the country butcher, by making it possible to obtain small quantities of fresh meat, did away with the necessity of keeping a few sheep to supply the family with meat. The farm flock, in short, had ceased to be a domestic necessity. From henceforth it was to stand or fall on the same basis as other departments of the farm—its ability or inability to show a fair profit.

Since the placing of the sheep business on the basis of profit or less above described, there has been a steady and constant shrinkage in the number of sheep kept. The Province of Ontario, and further East, in Quebec and the Maritimes, the shrinkage has been even greater. In Ontario in 1901, 669,530 sheep were killed or sold. In 1912 the number had fallen to 531,957. During the intervening years the shrinkage had been gradual and fairly uniform. There are many farms, probably one-half or even more, where no sheep whatever are kept, and while some farmers are paying more attention to their flocks than formerly, their number is small. The fact that, in the face of an increasing demand and higher prices, the number of sheep is steadily decreasing, points to the conclusion that in the opinion of the majority of farmers, sheep-raising does not pay as well as other forms of stock-farming.

Dual-purpose Animals

Yet sheep are undoubtedly most economical producers of high-class products, and occupy besides a place in the farm economy that no other domestic animal fills. They are strictly speaking, dual-purpose animals. With her

fleece, the breeding ewe almost, or quite, pays for her winter keep. Besides this, under proper care and management, she will produce one and one-half lambs on the average. During the summer, she and her progeny are quite prepared to rough it—to graze on rough or partly cleared land, eat brambles, burdocks and weeds generally, and at least partly pay for their pasture by keeping it free from rubbish. In the fall, it is true some special provision must be made—a rape-patch or clover field, but here again they help pay their way by enriching to a greater extent than any other domestic animal, the soil on which they are fed. Their winter feed is comparatively cheap—clover, roots, and a little grain—and in the end, the finished lambs sell for a price generally higher than that of the grain-fed hog, or the steer that has consumed far more than the lamb per pound, both in food and labor. In the older countries the economical production of mutton, and the profit-making nature of the sheep are freely recognized, and on the high-priced lands of England, for instance, great numbers are raised. Eastern Canada is well adapted to sheep-raising, both in soil and climate. That it is not a great sheep-raising country is due to certain very controllable causes.

The Menace of Dogs

There are three reasons why sheep-raising has declined in Canada. First, dogs; second, lack of a profitable, well-organized market for wool; third, a general lack of understanding among farmers, as to the proper management of a flock of sheep. Of course the latter is by far the greater reason why more sheep are not kept, but the two former are by no means inconsiderable reasons.

A year or so ago, an Ontario daily paper said, "It looks as though we should choose between the dog and the sheep, unless we are prepared to eat dog." There is no question but the dog-menace has had no inconsiderable part in curtailing the number of sheep kept in Canada. Anyone who has had the results of years of work in building up a flock, destroyed in a single night by the depredations of two or three worthless canines, knows what a detriment to the building up of a flock the danger from dogs is.

To say that there is a township dog-tax, and a fund for paying two-thirds of the value of any sheep destroyed by dogs, does not by any means remove the difficulty. Even in admitting that it is of some use, we must also admit that the flock-owner is still required to carry the risk of one-third of the damage—a very considerable handicap to the sheep industry as compared with other lines of live-stock. There is also a further damage that it is more difficult to collect for. The sheep is a highly nervous animal, and a flock once worried by dogs, is seldom of much value afterwards. This intangible damage is harder to prove and collect than the visible damage of sheep killed and wounded. The flock-owner, in spite of our present law, is still carrying this serious risk.

A farm industry for children. The care of young animals is the beginning of a fine human education.

It seems strange, indeed, that so valuable an animal as the sheep should be sacrificed to the (in most cases) worthless dog. It is quite safe to say that in nine cases out of ten dogs are not worth their keep. Indeed, in most cases they are kept, not for their use, but as pets. Every dog in the country could be destroyed to-morrow, and we would be better off than now. And yet, such is the strength of public sentiment in favor of this worthless and uncleanly pet, that not only are our flocks put in constant danger from them, but our persons, and those of our children, are exposed to a danger that may even mean the loss of life in some cases. And public sentiment and our laws, stand behind the dog! Recently an Ontario judge decided that every dog had a right to one bite! In the specific case the life was taken from a little girl, whose father attempted to collect the amount of the doctor bill from the owner of the dog.

Muzzle Wandering Dogs

What is needed is a universal law requiring that all dogs allowed at large without their owners shall be muzzled. There would be no hardship in this. Anyone who really valued his pet would be quite willing to comply with it, and it would do away, once and for all, with a very real danger, both to sheep and persons. If this danger were removed, one very serious handicap to the sheep industry would be done away with.

Another difficulty in the past has been found in the profitable marketing of wool. The lack of grading and of a properly arranged export trade has been a serious handicap, and Canadian wool has, in consequence, not realized the prices it should have done. The opening of the American market to Canadian wool has changed this, and, from now on we may expect much better prices than formerly.

The real reason, however, back of the decreasing flocks, has been lack of intelligent management. The Canadian farmer while showing himself remarkably adaptable in other lines, has been slow to master the details of successful sheep raising.

Poor Management the Big Cause

In starting a farm flock of sheep, it is important that the farmer should have an ideal before him, as to the kind of sheep he wants. We cannot say that there is any best breed, for each breed has its own merits and deficiencies. The mutton-producing sheep are divided into two classes—the long-wools and the downs. Of the former we have the Leicesters, Cotswolds, and Lincolns; of the latter the Shropshires, Oxford Downs, Southdowns, and Hampshire Downs. Both these classes of sheep have their merits. The long-wools are larger, yield a larger clip of wool, and are possibly slightly more prolific than the downs. On the other hand, however, neither their mutton nor their wool is quite so good quality, and they are not so hardy. This latter fact is due to the nature of their fleece. Being long and open, it "parts" down the centre of their backs when wet. This allows the rain to penetrate to the skin of the sheep, so that they are wet through after every rain, and cold and catarrh are more or less prevalent among them during the fall and spring. Against this the wool of the Down breeds is close and tight, and even a very heavy rain does not penetrate it. After a drenching fall rain they will get up from under the fence or tree where they have found shelter, shake themselves, and be as dry and comfortable as before the rain. Added to this, is the fact that the Downs yield a fine quality of mutton and wool slightly more valuable than the long-wools. Still, as we said before, we cannot claim that there is any "best" breed. Every prospective sheep-raiser must choose for himself, following his own preferences.

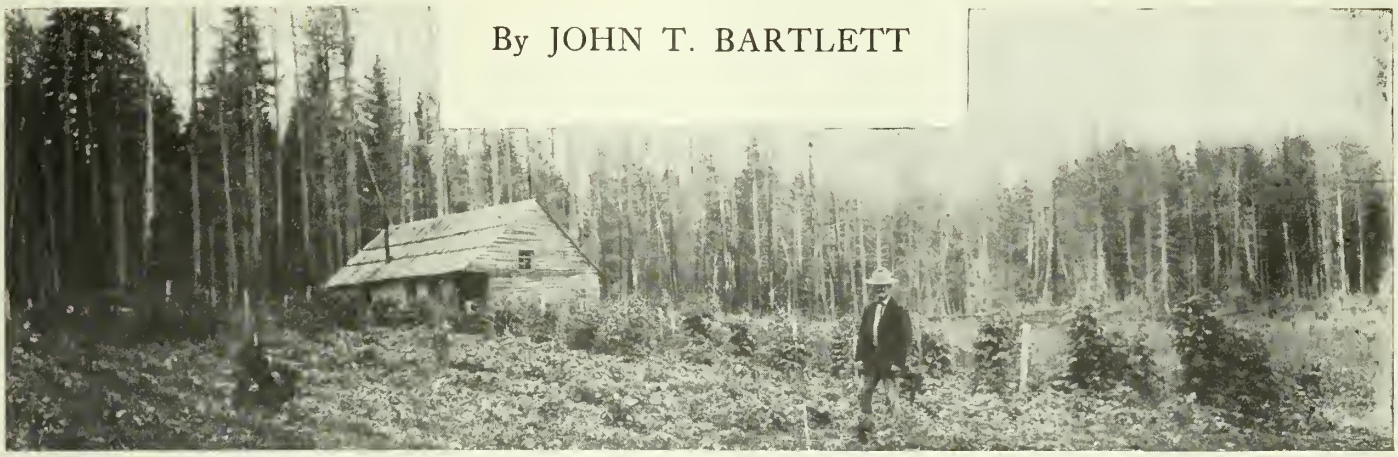
Having chosen the breed, it is important that certain well-defined principles

(Continued on page 92.)

During the summer the breeding ewe and her family are quite prepared to rough it.

The Rich Loams of the Skeena

By JOHN T. BARTLETT



The flavor of a Skeena river strawberry is equalled nowhere else in the world.

Profitable Farms are Already Being Made in the New Valleys of British Columbia with a Prairie Market Near

Farmer's Magazine has contended on several occasions that the Province of British Columbia is one of the richest areas in the world, and that it has enough arable land to support a fairly dense population. Its unexplored valleys must be as rich in opportunity as have those that are now beginning to awaken the desires of orchardists, hop-growers, vegetable-growers and stock farmers. This article deals with a fringe of the resources of a place that will in a few years become active with inflocking farmers who will along the line of this new railroad, seek contentment and gain in a land of fertility, interest and charm, with excellent commercial advantages.

OUTGROWING its swaddling clothes, the agricultural area, millions of acres in extent, adjacent to the Grand Trunk Pacific in northern and central British Columbia, is now justifying those well-meant but almost reckless claims made for it in the years when actual evidence was lacking. With the operation of trains from Prince Rupert, the influx of settlers this spring resembles a migration, but for many months past it has been a steady stream. The agricultural production, still small and very scattered, has shown conclusively that the climate, with considerable variations according to locality, permits the successful culture of most of the vegetables, grains and small fruits. Data respecting tree fruits is inconclusive as yet, but indicate that commercial fruitgrowing on a large scale is not practicable.

It is worth noting what pre-emptors are accomplishing in this new country. The pre-emptor's life is the pioneer's, and pioneering in British Columbia is a man's job. It costs $30 to $200 an acre to clear the land. Agricultural implements are subject to high transportation charges, and lime and the chemical fertilizers are prohibitive in cost. The settler is bound to have a hard struggle the first four years, and any kind of harvests, whether the yield is high or the quality good, must be called successes. All the more praise, then, to these trail-blazers whose experiences I will narrate.

The Kitsumgallum is a tributary valley of the Skeena, and its climate is the rainy one of the Coast, with two to three feet of snow in winter. Clearing is heavy, costing $100 to $200 an acre, but recompensing for this is the rich soil, a fertile river silt or sandy loam. Not far from Prince Rupert, the valley is fairly well occupied by settlers, one of the most successful of whom is R. Brown. Brown came from California a comparatively short time ago, and tackling a raw pre-emption was at first staggered by the effort and money required to bring it under cultivation. But perseverance is the test of success in northern British Columbia, and in it Brown was not wanting. He now has a large area in crops, and the records he has made a few farmers have equaled.

Timothy Seven Tons to Acre

In 1913 he had a field of timothy averaging seven tons to the acre. Some of his cabbage heads weighed thirty pounds. Sweet corn planted May 10 was four feet high and tasseled August 9. Two weeks after the snow went off in the spring, from seed planted the fall before, he had large headed lettuce. Practically all the garden vegetables, including melons, squash and pumpkins, were in his gardens, and from the sale of acclimated seeds he is this spring reaping a pretty profit.

"I can get a better stand of alfalfa in one year here than in two in California," said this pre-emptor, answering a query. "Wheat and oats have always yielded well, and dairying I believe would be very profitable. To me, personally, truck farming is very attractive, as for years to come, once the G. T. P. is in operation through the mountains, there will be good markets on the prairies. Tomatoes have paid me well. The fruit grows as large as tea-cups, and without difficulty I can raise $700 or $800 worth."

The pioneers of Kitsumgallum, in the strictest sense of the word, are David Stuart and John Thornhill. These men, who are mixed farmers, have greatly assisted with their advice newcomers to the valley. On their ranches they have proved that, at least in some spots, tree-fruits will do well, for they have apple, cherry, pear, plum and prune trees which bear fruit without a blemish.

A Soldier Goes Farming

Capt. Matthew McPhatter, as sturdy a farmer as he was a fighter, lives on the west side of the Skeena at Hazelton. The Captain has lived there for eighteen years; indeed, he was the first to take a deed in the district. To-day he retains his interest in agriculture, though his land has increased greatly in value with the coming of the railroad, making him independent. Conversing with the writer, McPhatter was as enthusiastic as a boy over his Christmas toys.

"Everything grows well here," he declared, "gooseberries, black currants, strawberries—in fact, all the small fruits, besides the vegetables. The size of the fruit is enormous, and the yields large, but what we pride ourselves on most is the flavor. The flavor of a Skeena river strawberry is equaled nowhere else in the world. The same is true of the other fruits and vegetables. The climate is like that of famous southern New Zealand, for owing to the presence of the Japanese Current, there are no extremes of heat and cold. The sum-

mers are early. There is little rain in the winter, but it comes throughout the spring, when we farmers want it most.''

A rich, chocolate loam, rich in nitrogen, is that on which Capt. McPhatter farms. The size of his produce is truly enormous. On his visits to the Coast cities he generally takes along some monstrosity to show his friends. Early last June, for instance, it was a giant stock of young rhubarb, three feet long and weighing four pounds. It was grown on soil utterly unprepared, and received absolutely no culture. A few weeks later it would have been twice as large.

Fraser Lake Ranches

The photograph of Foote Brothers' ranch suggests the pretty farmsteads which will one time dot the landscape of the entire Fraser Lake district. Foote Brothers, with a large acreage under cultivation, have grown successfully a wide variety of crops, from sugar beets to potatoes. Their pre-emption is at the west end of Fraser Lake, at Stella, in a district of proven agricultural worth. Summer frosts sometimes occur here, but only at rare intervals. They commence cultivation shortly after the snow is off, which in the clearings is between April 10 and 15, and plant the cereals on May 1, or very shortly thereafter.

A popular growth covered most of the Foote ranch, and the clearing has cost from $35 to $70 an acre. The soil is a white clayey silt. Crop yields of all the hardier vegetables have been heavy, and grains have done well.

Picking achievements at random, we find that at Burns Lake, 2,435 feet above sea level, the telegraph operator grows cabbage, lettuce, and potatoes in his garden; that last year in the Nechacko Valley McAllan produced seventy-five bushels of oats to the acre and Ludwig's ranch forty-five bushels of barley; that the Hudson's Bay post at Fort St. James grew carrots, turnips, radishes, and the other roots successfully. Many other cases could be cited.

Markets are Assured

It is idle to talk of the profits made by pre-emptors in northern British Columbia. Because the country is in a transitional stage, prices of produce are high, higher than they can hope to be when the balance between supply and demand has been established. Few pre-emptors bank their profits. Most of the increment is returned at once to the ranch, assisting clearing operations, purchasing live-stock, or constructing new buildings. With good judgment profits are used to establish a ranch which in years to come may be worth a small fortune. The question to be answered concerning this great North Country is not, what money do the pre-emptors make there? but, is farming feasible, and what branches are most successful? Good markets are assured, for the Grand Trunk Pacific in a few months will furnish a direct route to the prairies and to Prince Rupert and the Coast cities.

Small-fruit growing, market gardening, and poultry farming will all reach large proportions. Growing of the tree fruits, as stated previously, is not likely to be undertaken commercially on a large scale. Mixed farming will support a large population. Dairying and stock-raising are two branches as yet taken up by few settlers, but in the future they will likely become important industries in the bench lands. At Ootsa Lake, in the Fort Fraser district, quite a number of settlers have herds of cattle. To carry the cows through the winter they cut from two and one-half to three tons of wild hay. Summer dairying will likely become popular in this section.

The G.T.P. Country

One aspect of the agricultural situation in the G. T. P. country this article should touch upon, and that is its relation to the prospective pre-emptor. Other factors contribute, but the success of the settler rests, in the last analysis, on his first act—the choice of land. Inexperienced people, born and bred in cities, come in large numbers to this country. They must exercise forethought, keep cool when the cost of living at railroad towns cuts into their slender capital, and choose their land deliberately, with due consideration for the perhaps small remaining capital, their family, and their individual inclinations, or the end of the first year will likely find them discouraged and ready to quit. The choice of land is after all a highly personal thing. The government practically presents the settler with his pre-emption, but pre-emptions vary greatly. One will serve one purpose, another something else. It may cost a fortune to clear one, while a few miles distant a tract will be found on which the clearing is very light.

Here are some directions which old-timers in northern and central British Columbia give:—

1. Avoid pocketed land. It is subject to frosts.
2. Avoid muskeg. Always get land with good drainage.
3. Get close to water if possible. The danger from frost will not be so great.
4. Avoid land with gravelly subsoil. It will not stand the drought.
5. When searching for a pre-emption, take a spade or soil-auger along and examine the soil frequently.

The implement mentioned, the soil auger, may be made from an ordinary two-inch wood auger by removing the

This photograph of the Foote Brothers' Ranch suggests the pretty farmsteads which will one time dot the entire Fraser Lake district.

handle and "T," extending the rod by means of iron piping and connections to four feet, and placing a "T" joint at the top through which to put the handle. The surface of the ground is oftentimes misleading as to what lies beneath, and frequent borings should be made to ascertain the depth of surface soil and the type of subsoil. Generally speaking, the deeper the soil, the better it is, for it will hold the moisture longer and sustain vegetation through dry periods. The finer the particles, the more retentive the soil, but heavy clay is undesirable.

Once he is established on the land, the pre-emptor should get in touch with the local farmers' institute, if there is one, and certainly with the provincial department of agriculture at Victoria. The latter has numerous helpful bulletins, and if these do not give the desired advice, personal queries will receive careful attention. The Government has already issued a tentative list of tree fruits and small fruits advocated for trial in northern and central British Columbia.

Land recording offices, where pre-emptions may be filed on, are located along the Grand Trunk Pacific at Prince Rupert, Hazelton, Fort Fraser and Fort George.

Dollars Dug by Ditching

Money Made From Drained Fields Calls Out Loudly for Greater Numbers of these Machines on Canadian Farms

By RALPH H. CLEMENS

If a statement of the increased returns from drained lands throughout the Dominion could be prepared and hung up at every cross-roads, there would soon be a greater demand for ditching machines and field tile than there ever was for pancakes at the season's first boiling of maple syrup. Unfortunately there is a good deal of dubiousness regarding not only the expense of the ditcher and labor, but the management of the machine once it is installed. These doubts are explained away in this article with a simplicity that will be appreciated by every reader.

If your land is too wet
And you're burdened with debt
And incumbrances begin to accrue,
Obey Nature's laws
By removing the cause
Drain your farm or it will drain you."

IN moving my heavy self from place to place, there are many things which I must take into consideration, I find that I can cross any bridge where ordinary threshing tractors go. Hills must always be regarded by me as something very hard to climb, although when it is necessary I can crawl hills where very few other engines can go.

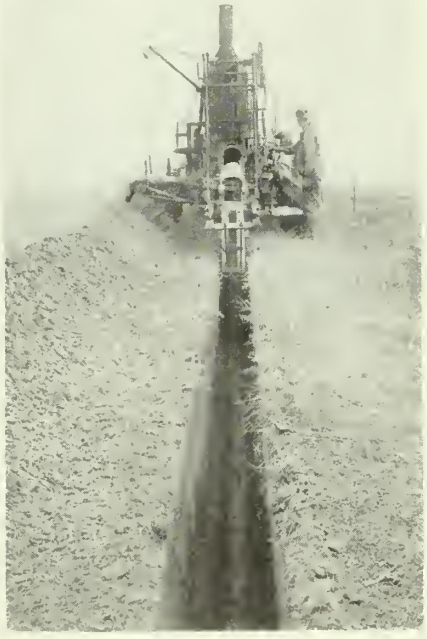
I always travel very slowly and it gives me considerable inconvenience when I am asked to go at the rate of two miles an hour. Thus you see I never exceed the speed limit.

I never like to have any one speak of my weight because thus I am sometimes barred from crossing bridges which are quite capable of carrying my weight. Owing to my low, broad, flat, caterpillar wheels, which each have 8 square feet of bearing surface I am easier on bridges than other heavy machines.

Stones are an Impediment

When I get to a field I never like to see large stones lying around the fence corners, or anywhere near. Where I see a few stones on top I always find many more below the surface in the subsoil.

I can dig in stones when it is necessary, and I have quite frequently done so, but it is quite hard on my constitution, and at present I am subject to quite frequent attacks of cold feet on this very account. My heart is just as strong as twenty horses combined and my stomach seldom if ever fails me, and when it does all I need is about 10 or 12 gallons of oil per day of 10 hours.



The tractor ditcher leaves a perfectly uniform grade and a smooth, well-rounded bottom, delivering all the excavated earth on the left side of the ditch as it goes up the grade.

100 Rods a Day

When I get into a good field and my operator shows that he knows his business by keeping my wounds well repaired, I can dig trenches at a very remarkable rate, without causing any serious physical strain. I have dug 175 rods per day, but not very often. I have on different occasions dug 120 rods per day but not often more than two days in succession. When I do 100 rods per day I consider that I have done a pretty fair day's work, even in good soil. But I cannot average that for it takes me considerable time to move about from place to place and sometimes I must stop for rain. If I could average anything over 70 rods per day from early spring until fall I would consider that I had done a big summer's work.

Tile Laid at Once

In digging a ditch if my operator is careful I always leave a perfectly uniform grade, and a smoothly, well rounded bottom. This rounded bottom is so shaped that the tile-layer who comes immediately behind my digging wheel, may lay down any size of tile without any further delay. I always like to see the tile-layer follow up quite close behind me, because I know then that the tile will be well laid, and that I will not be blamed for making a bad bottom when I invariably make such a good bottom, complete in every detail.

I feel rather lonesome here in Ontario because I have not many of my kind in this country as yet. Possibly about 75 of us in all, and we are spread so far apart that we scarcely ever see one another. Until the spring of 1913, only comparatively few of my brothers could afford to come to this country on account of the heavy duty, which has since been taken off. I had $700 duty to pay, but even so, I felt it my duty to come. I am now very glad that I came for I am needed so badly and I feel that my life will be well spent.

As I grind my way up the low-lying valleys of this Province of Ontario I feel quite proud to think of the good work that I am doing. I have come to stay. I am going to make my home in Ontario because every one seems to meet me with a smile. I help to solve the hired help problem to a much greater extent than I am ever given credit for. I do a great deal of very hard, dirty and necessary work hitherto impossible. I rarely go on hills, I make the low-lying level areas exceedingly productive, whereas, heretofore they have been an expense.

Although thousands have stood in amazement, as I slowly crept and crawled and dug my way, from drain to drain, I cannot say as yet that I love the farmer as I do my best friends. The farmer usually appreciates my good work only in a half-hearted style. He seems quite astonished at my wonderful mechanism as he compares it with the old "armstrong" method of mud-slinging. Yet he does not see far enough to see that if he co-operated with several of his neighbors and got me to do his work it would be a paying investment.

My Best Friends are Very Small

My best friends are exceedingly numerous. They live in the surface soil when it is possible to do so. But there are many places where they cannot live on account of the excessive moisture lodged in between the tiny particles of soil. Now I come along and having sympathy for my friends, I dig large trenches in the ground and cause the land to be relieved of all excessive moisture, and thus I give my little friends solid home comfort. Here now they thrive to the very best advantage and whole cities of them are built up wherever I go. Their chief occupation is manufacturing. These little friends of mine, these manufacturers, these bacteria, as they are sometimes called, have as their motto, "Co-operation."

Bacteria co-operate in manufacturing food for the tiny rootlets of all plants. The mouth of a rootlet is so small that it can assimilate food only when it has been made into a solution by the bacteria. Now bacteria can only thrive when under proper moisture conditions. Now it's me that knows this, and so I drain the land and thus I have at once an abundant supply of plant food readily available for the production of strong healthy plants. Thus I say that bacteria are my best friends because I very often get the credit for all the work that they do besides the credit for digging the ditches.

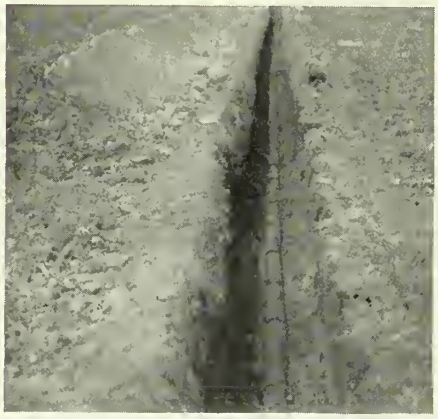
I Do Not Fill the Ditch

But now you ask, if you are so expert at digging ditches what about filling them in? Well, I never do any filling in myself, therefore it would be out of place for me to speak. I will leave that part to some one whom I know has assisted in the filling in of many miles of drain, a man who was once my operator.

Following a Traction Ditcher

If every farmer knew exactly the best method to pursue in filling in a ditch, there would be no call for an article such as this. Therefore, I hope that after having read these few lines, you will have no cause to say, like the man from Missouri, "Show Me," show me how best to fill in a ditch after it has been dug. There are several ways of filling in. One way is the short shovel, "armstrong," back-breaking method. This is the old way of filling in a ditch and although this method must be resorted to to a slight extent even now, it is, in nearly all cases, decidedly too slow. When we know this period in agricultural development as being the day for doing things on the large scale; when we have by the use of one small lever almost absolute control of twenty or thirty horse power; when farm products are marketed in the auto truck and threshing machines are run by the use of an electric motor and ditches are dug, true to grade by gasoline tractors, we cannot help but feel that new things in farm work are springing up almost every day.

Ditches can now be dug, and the earth replaced in the ditch without the aid of a shovel. The traction ditcher delivers all the excavated earth on the left side



Farm drain with the tile laid ready for filling in.

of the ditch as it goes up the grade, but does not put the earth back in the ditch.

After the tile has been laid and before they are covered (every tile should be inspected) by some one who has a direct interest in the property being drained. After that and as soon as possible after the trench has been made, the tile should be blinded and tramped carefully into place with about six inches of loam covering. This blinding does not require much work, but should be very carefully done in order that not one individual tile is left open, displaced, cracked or broken. "A chain is no stronger than its weakest link" applies here in a very direct sense.

After the blinding has been carefully done two teams, two logging chains and one 10 in. x 10 in. square timber 15 or 20 feet long can do the main bulk of the filling. Now they should not allow the excavated earth to lie alongside of the ditch until it has become settled, compact and puddled with the rains. If they proceed while the earth is open and loose, the timber act will fill in the ditch in a comparatively short time.

Three straight, stiff, steady draws along the trench with the timber drawn along on the bias will nearly fill the ditch. But one must learn how to attach the chains properly before much headway can be made. If the hook on the chain which goes about the end of the beam is set too low, the beam merely skims over the surface. If it is set too high, it will probably do very little better. Then again if it is set just an inch or two lower it will give the teams more than they can draw. So it is very necessary that one should adjust the hook on the chain until they find out exactly how it should be set. Remember that it is equally as necessary to find out the exact position of the hook on the beam as it is necessary to find out where to attach the clevice on a single plow in order to plow the proper depth.

When the exact position of the hook has been determined, each teamster should stand on the beam immediately behind his team, as by so doing, he keeps in more intimate relationship with his fellow-teamster, who has the opposite end of the beam. The beam should be drawn on an angle of between 60 and 90 degrees, depending somewhat on the amount of horse power available, and also depending upon the amount of good generalship exercised by the teamsters. If the teamsters get high-spirited upon the first attempt, very little headway will be made, but if they take the thing rather coolly to begin with, the horses will soon learn what is wanted.

Two swaths with an 18-foot beam and one with a 10-foot should finish up an ordinary three or four-foot ditch. A short beam goes better upon the last trip. Instead of having a short beam for the last trip, if one has a road grader near hand, it will do cleaner work. Or perhaps the split log drag would work the soil over nicely. To be sure any one of these implements mentioned will fill in the ditch five or ten times more rapidly than will two men with a shovel, while the teams stand in the stable kicking down the stalls.

COLOR IN YOLKS

MANY people have noticed the absence of color in the yolks of eggs that are purchased fresh in the winter time. The cause of this is almost solely due to the feeding of the hens, and in some measure to the breed. The Mediterranean breeds, and especially the white Leghorns, invariably produce eggs with pale yolks.

Experiments have been conducted with different feeding rations to show that the color of the yolk is affected by the feed. It has been found that where hens have abundant free range they produce the best-colored yolks, but as this is impossible in Canada during the winter, the feed question is the only one to consider. Color may be imparted to the yolk by varying the amounts and kind of whole grain that is fed. Succulent feed, with cut clover, alfalfa, and sprouted oats, aid greatly. Corn in the ration is also good.

Dutch Belted Cattle

By HARRISON COLBECK

A herd of Dutch Belted cattle with Quebec Jerseys in the background, on Sir William Van Horne's estate, Covenhaven, St. Andrews, New Brunswick.

A Distinctive Dairy Breed that is Winning Its Way Slowly

The reason for the many varieties of animals lies doubtless in the varying moods inherent in humanity. We detest dull, drab uniformity. Interest flags when differentiation in species does not exist. So it is that the advice is so sensible that a man should select the breed he likes. A Holstein man will not make a permanent success with Jerseys, or a Leicester lover ever grew great in Southdown niceties. In this description the writer has introduced to our notice a distinguished bovine race, having only a few representatives in Canada. New Brunswick has a few.

THE history of a breed of cattle is always closely related with the history of the people who have developed this breed. The demands which the men experience call forth the new breed. The characteristics which will distinguish it from all other groups or classes, are the direct response to those human needs that are most intensified, and here are the things that mark it as different, that call it into being.

In all breeds there are a few characteristics which cannot be perceptibly influenced in one generation by the will of the breeder. Principal among these is the ability to produce fat in milk. A breeder through selection can build up a group which as a family or strain possesses to a marked degree the ability to give milk rich in butterfat, but on the other hand he cannot take one individual or even a group and handle it in such a way as to materially affect the yield of butter fat. It may be varied to an extent through feeding, but this trait is not readily transmitted in an appreciable and dependable degree from one generation to another. It is more in the nature of an accident than a cultivated trait.

Experience has shown that the volume of milk may be increased or varied according to the feed and care given and in this way the amount of butter fat will be influenced, but not its percentage in the milk.

The process of development is a wonderful thing. It is seen in plant and animal life, and it may also be followed in the human race. As an illustration one has only to compare the different types as they exist to-day with those that flourished in earlier ages.

Compare the race horse with the draft horse of the present time, and then think back to the little wild horse from which both of these have sprung. This primeval type was a little larger than a St. Bernard dog, and it possessed neither the power of the draft horse, nor the endurance of the race horse. Yet both of these are the product of long years of breeding and selection and development.

Process of Selection

Fully as marked a process of selection and up building may be seen in the bovine race. They represent better than anything else what can be accomplished by mankind in the way of turning nature's powers and adapting them to the wants and needs of humanity. The dairy cow of to-day is no more like her first ancestor than is the race horse like the first wild horse that wandered over the plains.

Another characteristic of this development is the influence of nature upon the type and the individual. Animal life is quick to fit itself to conditions under which it flourishes. As an illustration of this the cattle of the lowlands where rich succulent food is found in abundance are of much larger frame and type than are those that find their food scattered over barren hillsides or that flourish on a more rugged and less productive soil.

The above facts are given to demonstrate that natural conditions, such as climate and the abundance and quality of food have their influence in the development of a breed and in fixing its particular traits.

A Distinctive Dairy Breed

These points are especially emphasized in the Dutch Belted cattle. Dutch Belts are distinguished particularly through the very regular color markings. They are distinctly a dairy breed and it would seem that they had been developed in the past more especially as a fad which could be indulged by the leisure and wealthy classes rather than as an extremely practical cow that will return a profit and help pay the mortgage or the running expenses on the farm.

The breed is known in its native home as Lakenvelders. The term comes from the word Laken, which means a sheet wound around the animal's body. In their native land it is a custom, born of necessity, to blanket the cows that have recently calved. The climate is such that this treatment is imperative. Tradition says that in the remote past when

Blue belted cattle, cool green woods and a little white homestead furnish excellent material for the artistic canvas. No wonder most of our idealists come from the old hundred acres.

the breed was first being developed white blankets were kept on a few of these cows and on account of the striking contrast the offspring were accidentally marked with white middles.

It is a characteristic that has been noted since the days of the ancient shepherds on the hills of Palestine that it is possible to influence the color markings of the unborn offspring, and it is not at all improbable that such was the first cause for the real Dutch Belts or Lakenvelder cattle.

Made Good Records

To-day the breed is being developed very extensively and especially for dairy purposes. Some very creditable records have been made both in milk and butter fat production. On the short-time test some cows have approached the 80-pound mark for milk in one day, and in the yearly test, two-year-old heifers have given considerably over 300 pounds of fat. This is a splendid showing and by virtue of the fact that the work of testing has just begun in the breed there is no doubt but that it will far surpass any of these figures as soon as the system becomes more general. Only a few breeders have taken up the work at the present time.

The type of the cow conforms to that of the real dairy animal, having a small head, slim neck, deep body, which indicate a capacity for handling a great amount of feed, broad level hips and straight back. The large and well-proportioned udder is a noticeable trait in all of the best individuals in the breed.

Dutch-Belted cattle are not very numerous at this time because they have been mostly guarded by the wealthy classes of European countries, especially Holland. They have been almost exclusively the gentleman's cow until recent years. One authority says that there are about 1,000 of them in Holland, although some of these are not bred pure. Many animals can be found just as nearly perfect in the belt-mark as can be bred. One of the first importers of Dutch Belts to America was P. T. Barnum, the great show man. The peculiar color markings and attractive appearance struck his fancy and he used them first as a novelty to entertain the public and later found their attractiveness was by no means their main claim for consideration and a herd was established.

Probably the first importation was made in 1853 by Mr. Haight, who was then consul to Holland from the United States. Exportations have since been made from the United States to Canada, Mexico, Brazil, and Cuba. There are about 600 men who are breeding Dutch Belted cattle in the States at the present time. These are scattered over the principal dairy sections which centre around New York in the East and Iowa in the West.

Prepotency of Color Markings

A striking characteristic of the breed is the prepotency of color-markings. It is possible to keep these very distinct and very regular. In fact the white belt must be decided in order to admit the animal to registration. There is no shading off with the ordinary roan color, and there must not be any striking irregularity in the demarkation. The cattle are decidedly black in the fore quarters and the hind quarters, with black head and neck, but the middle is pure white belt which varies in length, but is distinct in outline. The cows weight from 1,000 to 1,250 pounds, and some of the bulls have been know to tip the scales at better than one ton.

The breed is distinguished for docility. The bulls seldom become dangerously ill-tempered, although like any other prepotent animal, they do not lack masculinity, and they are by no means sluggish or weak. The cows are seldom troublesome, no matter how large the herd, and for this reason they are easily handled and kept.

The color markings make them an especially attractive breed and one can hardly imagine a more delightful sight than a herd of well-developed, well-kept, Lakenvelders in a rich green pasture with a background such as is common wherever best farming conditions prevail. A scene like this is a joy to the eye of every lover of the beautiful in nature and it is little wonder that a breed so strikingly attractive is rapidly growing in popularity.

A typical Dutch Belted milker in the foreground. The sharp outlines of the girdle mark the pure bred.

A House To Live In

The Country Builder Wants Durability, Comfort and Home-like Features Rather than Architectural Frills and Freaks

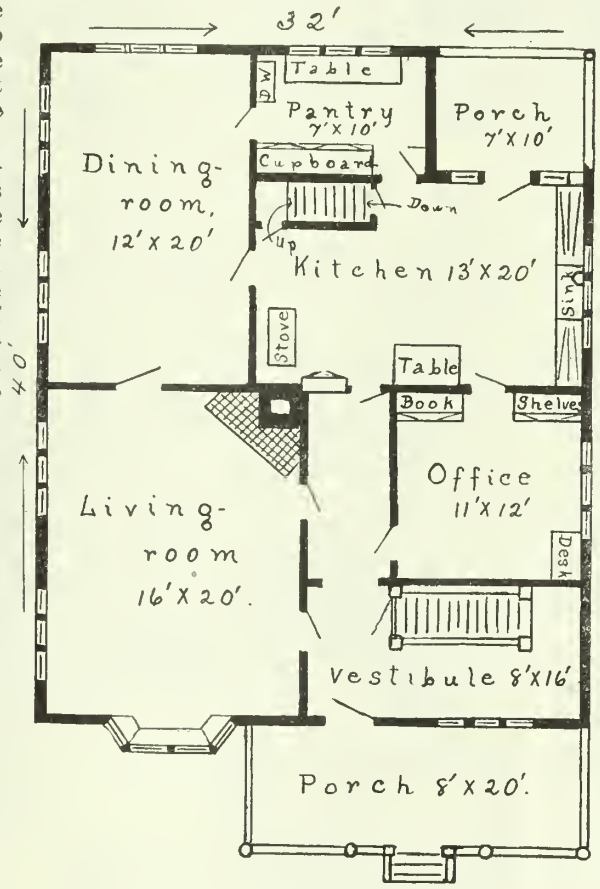
By ETHEL M. CHAPMAN

Too many farm houses are built with little consideration for use. The architectural plan is designed after the model of the first house built in the neighborhood, and in the lay-out of the interior, convenience and comfort are sacrificed for the sake of large parlors and spare rooms, which the family see only on company occasions. The plans given here are drawn purposely for a farm house, not an imitation of a city residence, but a place built for a farm family to live in.

THE ideal farm house is one that will stand the test of permanent occupancy, one that time and use will mellow rather than deteriorate and that will only grow dearer with each year's familiarity. Knowing this the builder will prefer a durable construction with simple home-like features without and within, to architectural frills and interior elaboration. The probable location, the size and needs of the family, and the amount of money to be expended in the building, furnishing and up-keep will be considered first; then the healthfulness and peace and comfort of the family will come before display.

This does not mean that a pleasing durable style of architecture is an insignificant feature in home building. If there is one picture more than another have forgotten places between, it is the old house that gave us our first impression of home. For reasons apart from sentiment it should be beautiful. This depends rather materially on the site chosen for building, and since the matter of drainage is perhaps more important than appearance the problem is sometimes difficult. A building rising out of irregular ground looks more closely akin to the landscape, than one standing on a hill or treeless level, while the homey effect of many of the old-fashioned country houses must be attributed to their being set deep in an orchard. However bleak the location may be, wonders can be wrought in time with trees and vines. The building materials too have much to do with this. A foundation of field stone gives a fine rugged effect, especially if the stone is also used in an outside chimney. A roof of shingles stained or painted a soft green or terra cotta gives a pleasing finish to cement or plaster walls, or on a frame building they may be carried down a few feet on the walls (Which are painted in a dull contrasting color) to get a sort of bungalow style.

If you would not tire of your house, you had better avoid any extreme plan, elaborate cornices or much carved wood about porches, doors or windows. Dormers break the monotony of a long roof and are ornamental without looking like an attempt at display, and anything added merely for display has no place in farmhouse building. It is superficial and therefore inconsistent with country ideals. In a house of this plan the attic windows could well be projected in dormers, instead of gables making the house appear lower and more restful. It would not be so important to have an attic if you could spare the back bedroom for a store room, but a farm house needs a store room somewhere.



Ground floor plan. No space is wasted in show-rooms.

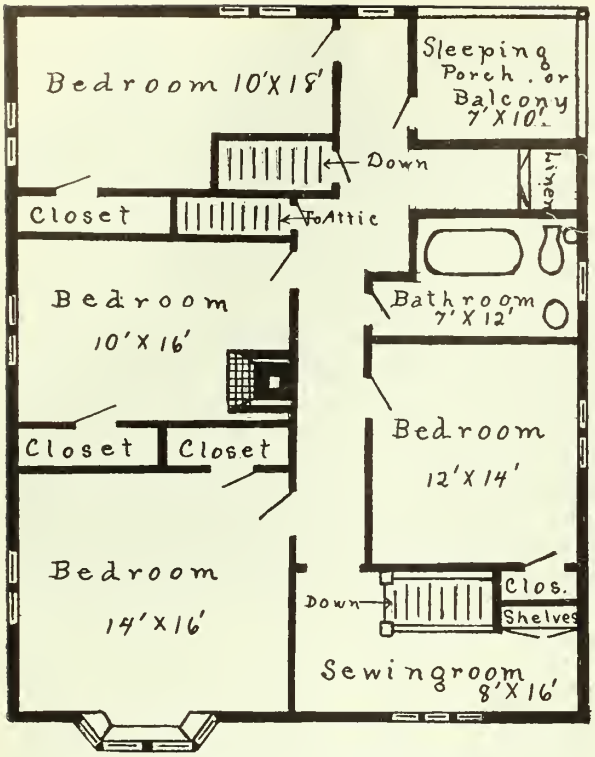
An interesting feature of this plan is the grouping of windows. A window in a house is something more than an opening in the wall to admit light and air; it can be made an important part of the architectural scheme. Groups of windows carry out the wide lines of a building and impress the bungalow effect, althought this is not their only purpose. The inside walls are not broken up into so many sections and the windows being small allow ample room for furniture like book-shelves and china cabinets to be built in below them. Several windows together also offer possibilities for very pretty uses of small paned glass, and with the exception of the bay windows, which are the usual length, may be put in as casements. This is decidedly worth while for convenience in cleaning, particularly wtih those upstairs.

In this plan the front entrance or the door from the front porch opens into a vestibule. This is no reception room, just a place for the convenience of anyone coming into the house. From here one can reach the living room, office, kitchen, or upstairs without passing through any other room, except the hall. Under the open stairs, is a coat closet, and in the corner a seat with a box beneath for rubbers, etc. The hall is made as short as possible, only eleven feet, not so much to save space as to save traveling in going from one room to another. On one side is the living room, on the other the office, kitchen at the back.

The office in the farm house has a purpose well worth the space and cost of furnishing. Even if we had never heard of "business farming," and farm book-keeping, every home should have a quiet corner where you can go to read or write or reckon up accounts and have a place other than the clock for keeping receipts and tax-bills. With the built-in bookshelves the room answers the purpose of a library as well, and being large enough to accommodate a good-sized table would make a quiet spot for school children for an hour in the evening. There are two doors. The one opening from the hall will generally be used by callers; the one opening into the kitchen is most convenient for the family.

The living room is the largest room in the house, very well lighted and cheerful with its grouped casements, large bay window and seat, and open fire-place. The fire-place, of course, is optional. It is a luxury, but one that pays for itself many times over in the dream-weaving, hospitable atmosphere it lends to the room. It is not necessary to have an expensive mantel or tiling. A brick chimney and hearth with a heavy shelf to match the woodwork has a substantial simplicity very appropriate for a country house.

It is a popular custom to have an open



Second floor plan. Don't overlook the bathroom and the new use for the balcony.

archway or sliding doors between the living-room and dining-room so that the two may be thrown into one on special occasions like evening entertainments. This is worth considering, but the privacy of the rooms should never be sacrificed. Sliding doors are all right, but the mistake in having an open archway will soon be realized. Wherever there is a wide opening care must be taken to see that the decorating schemes of the rooms do not clash.

The china cabinet in the dining-room, is built in below the high casement windows and bears out the general idea of having the house durable and dignified throughout.

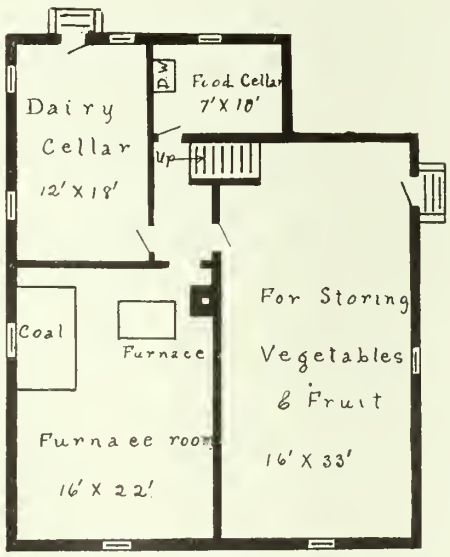
This plan gives a very compact lay-out of dining-room, kitchen and pantry. As a rule the least unnecessary traveling is done where the kitchen and pantry each open into the dining room and into each other, and where the dumb-waiter, pantry, cupboard, and kitchen range are as near as possible to the dining-room door. The cellar door opening almost between the pantry and kitchen is also well placed to save steps. The kitchen is not as large as we usually see in a farm house. The space is carefully economized and the stationary furniture placed to make work as easy as possible. The little cupboard beside the range, with shelves for seasonings, flour-dredge, etc., and compartments below for cooking utensils means more than it sounds in the telling. The broad drainboards running four feet on either side of the sink and the "hinged-on" table will fill their best purpose only when their height is planned to suit the woman who uses them.

The back porch is another genuine housewife's friend. The busy woman will get outside a great deal more if she has a place like this to take "pick-up" jobs in odd minutes during the day.

The second floor plan corresponds rather closely with the ground floor. The hall is necessarily longer and one foot narrower — space is worth more in bedrooms than in a wide hall. The space above the vestibule, where the front stair comes up can be used very well for a sewing-room. The front bedroom has its window-seat and box the same as the room below, while the room through which the chimney goes up may have a grate if the builder wishes. For convenience the door to the attic stair opens right beside the back stair landing. Then we have a balcony over the back porch which will serve the best purpose screened in with mosquito netting and awnings for a sleeping porch. It is worth a good deal to have one of these, particularly when there is a baby or invalid or fresh-air enthusiast in the house.

One of the most important features in the farm house is the bath-room. Progressive people here and there all over the country are demonstrating that complete water systems can be installed at reasonable expense and operated with practically no expense. The septic tank is one of the simplest and safest means of waste disposal known. In this plan the soil pipe runs down through the kitchen right beside the sink. The material of the pipe is perfectly impervious to gases, of course, and with open plumbing there is no danger of a possible leak passing unnoticed.

In the basement of this house, besides a furnace room, food cellar, and large compartment for storing fruit and vegetables, we have a milk room or dairy cellar, with an outside entrance of its own and no connection with the other rooms except through the hall. Provision is made to have this room well lighted, and when cemented and whitewashed it should be one of the most pleasing and certainly one of the most important features of a farm house where any dairying is carried on.



Lay-out for the cellar. It is more important that this should be divided into rooms than that the kitchen and living room should be separate.

In the entire layout of this plan the aim has been to have utility, dignity and comfort. There has been no attempt to make nooky rooms and other architectural surprises, but when decorated and furnished with harmony and good sense, it should make a home fit for a king and none too good for ordinary working mortals.

BEECH WOOD USES

THE WOOD of the beech tree, when first cut, in its natural state in the open air, is apt quickly to decay and be attacked by insects, but, put to the test of hardship, to the ordeals which annihilate most other timbers, it is steadfast and unyielding. Every Canadian knows how quickly a beech stump rots away. The English engineers use beech in all great under-water works where timber is used at all, as in weirs and sluices and dock gates. It is laid deep in the cold, damp earth.

Eight hundred years ago the Normans knew the story of the beech tree's sterling worth, and they trusted it with the gravest responsibility that can rest upon timber. They founded their great cathedrals and abbeys in part upon beech.

During the last few years the foundations of Winchester Cathedral were penetrated by water, so that a diver had to excavate and go down into the subterranean flood like a diver at sea; and in laying new foundations he had to bring out the old. There under the cathedral, side by side with the staunch old oak, he found mighty masses of beech, as hard and sound as on the day when it was laid in the dank and clammy earth.

MAKING MORE LAND

LAND reclamation in Holland, a task that has been prosecuted steadily for centuries with such indefatigable energy (the Hollanders boast somewhat irreverently that "God made the world, but the Dutch made Holland"), is still going on as actively as ever. From 20,000 to 25,000 acres of land are reclaimed every year. It is said, however, that more than 250,000 acres of the best soil is still under water, not including the great area under the Zuider Zee, the reclamation of which is a perennial topic of discussion, and is now being actively discussed in agricultural engineering.

Woolly Aphids—and Dollars

Two Farm Neighbors Discuss Apples and Mixed Farming and Fight it Out in Figures

By MACKENZIE HALL

The enthusiastic orchardist generally has to listen to some rather discouraging comments from his neighbors—at first. Fighting insects and fungus pests is no holiday celebration either, until you get so interested in the game that you can't let it alone, or until you see your enemies taking the course of the Philistines, and dollars fairly dropping from the trees. This dialogue is unique only in its vernacular, the figures speak for themselves, and make sketch as significant as it is entertaining.

"I WOULDN'T plant out an orchard if you gave me all the trees and paid me to work the land! Orchards are perfect humbugs. See Dan Remmer's place, there. He has worked harder and waited longer than any man around here, and I bet I make more money off my land, take year by year, than he does."

Such were Bill Mallet's remarks to me one day as he wandered across to where I was working in a neglected orchard I had recently acquired.

Bill was a peculiar fellow. It was commonly said among his neighbors that he liked to talk. At any rate he seemed to have a persistent opposition to popularly successful men, whose arguments he sought to break down by an explosive and startling line of assertions.

I expected his orchard diatribe when the conversation was started with our opening interrogation.

I was examining a young Blenheim Orange apple tree set out the previous year. A peculiar fuzzy substance, a white mouldy-like covering had completely enveloped the young top shoots of the tree. An examination showed small colonies of rusty-colored or purplish brown plant lice underneath the "fuzz."

"What do you suppose that pest is, Bill?" was the way I invited the explosion.

"That's just it, you orchardists are always up against some new plague. You have to worry your whole time over sprays, poisons and fungus troubles. In fact, I often think you are a kind of apple scab yourself, Mack!"

"Perhaps so, but then you must admit, Billie, that you can't drive me away from an apple orchard by spraying!"

But the white mould-like casing of my young apple limbs drew his attention more closely, and this previously unobserved condition now became a subject of interest, just as many common things become mighty interesting when closely examined.

"By gad, that is a peculiar pest. I rubbed the end of that water spout and a purplish rusty juice has smeared my hands."

"Look closer at this one that is undisturbed, Billie, and you will see something."

"Sure, Mack, why those are plant lice; they are alive. Now who in the name of Jack Robinson would have thought that lice were causing that trouble!"

"I believe I have learned what this is, Billie. It is called the "Woolly Aphid," and is found on the tender branches and on the new wood surrounding an old wound. These lice are feeders upon the bark, the branches, roots and tender places of the trunk. They are covered with that downy matter, which is really a white flocculent spray secretion!"

"Hold on, Mack, you need not think you can get that guff of big words off on me. What did you say—flocculent?"

"Yes, flocculent, is a word meaning flakes like a lock of wool; it is derived from an old Latin word meaning a lock of wool."

"I suppose that is why we talk of a flock of sheep," chuckled Bill.

"But to come back to our Aphid. The woolly stuff is secreted from the insects. When they attack the roots of the trees, it leads to enlargements. They injure the trees by sucking up and exhausting the plant juices, as well as poisoning the plant. Do you know that this poisoning is a feature of nearly all parisite action? Take the mosquito. It poisons as well as bites, when it sucks up your blood."

The leaf at the top of the picture is a victim to leaf curl. The seedling apple below shows a colony of Woolly Aphids descendants of migrants from Elm leaf curl.

"By jinks, I should say so," said Bill, as he scratched his head.

"It is true that the injury to orchards in Canada, is not severe from this cause, although young trees are often much damaged, especially in nursery stock. When this insect is abundant all the roots of a young tree to the depth of a foot or so become clubbed and knotted by the growth of a hard, fibrous enlargement, that seriously interferes with the thriftiness of the tree. It is these sickly trees that readily become a prey to other diseases. You know that the tree lover will study to understand all about these things, just as you do with your horses, Billie!"

"Yes, you bet I don't waste my time poking around trees and bushes when I could be plowing or cultivating a paying crop, or raising a fine Clyde colt."

"A paying crop—why, I want to tell you, you haven't an acre on your farm that turns out what this acre does in net proceeds."

"Well, now, you can't expect me to put one acre against another. That is not fair. But look at the whole farm. I'll wager I am making more money, year in and year out, than my neighbor, Dan Remmer, with all his fine trees."

Prove It in Figures

"That is only hearsay, Billie, the best plan is to prove it in figures and charge up your work and expenditures and see where you are at. No two men live alike you know. One household may consume twice as much as another. The Chinaman in his British Columbia garden saves more money than his white neighbor because he lives in a hut on rice and water. But you would not live that way, Bill."

"No, that is all I get in this world, and I am going to have enough to eat, anyway."

"I agree with you, Billie, that the ordinary farmer who does not intend to practise modern methods of spraying, pruning, and cultivating his trees, should not grow any orchard. He should attend to the thing he delights in. But I must say that I can make more money off an

acre under trees, than you can off your average acre under mixed farming. And the worst will be no harder than yours."

Billie couldn't see it, and stroked his chin incredulously.

"See how you have to fight just such pests as this 'flock-of-lice' as you call it here."

"But fighting them is easy when you know the habits of your enemies. You can't get a good crop of wheat in that back field of yours unless you know how to treat it right, and I tell you, the time is coming when we will have to study our soils more if we are going to get them to produce enough to keep us from moving or giving our homesteads to Italians or Galicians."

"That may be," grunted Billie, "but how are you going to kill the Aphids?"

"That is easy! Although the habits of this insect are peculiar, any common spray or wash put on with sufficient force to penetrate the woolly secretion, will do the work. But a tobacco mixture made by steeping gently and not boiling, 2 lbs. of tobacco stems in 4 gallons of water, is good. The usual kerosene emulsion is made by dissolving one-half pound of soap in one gallon of soft water by boiling, and then adding 2 gallons of kerosene, at the same time stirring the mixture briskly. This will be enough for 30 gallons of spray, and it can be put in with your regular spraying machine. You know, Billie, tobacco has more uses than you give it. You don't appreciate this work, but come over some day and I will show just how Dan Remmer is better off with his orchard than you are. Get all your figures made up for your average year and we will talk it over together."

Conference on the Verandah

The next afternoon, just as I had nicely got to work with my tobacco on the "flock-o'-lice," as my neighbor called the Woolly Aphid patch, I saw Billie wending away over the creek flat toward the old orchard where I was at work.

"Good day, Mack! Have you found out any new pest to fight" was his salute as he ejected a generous portion of Black Watch.

"Well, no—I have just been teaching these fellows to chew tobacco, too. I hope they don't survive as long as some other forms of life under the treatment."

"Now don't get gay, you enjoy a cigar once in a while yourself, and after all, men's view of lice is largely one of degree," drawled Bill from the fence. "But say, how about those returns from the farms? I have got my income from the 50 acres under mixed farming without apples and I want to show you that I have Dan Remmer beat a mile."

"All right, come over to the veranda, I happen to have secured Dan's returns last night, and I think I'll make you haul down your colors."

With this, Billie produced his figures for his fifty acres under general mixed stock farming. It read somewhat as follows:

Nymphs of the Woolly Aphids on a watershoot of mountain ash. These are the immediate progeny of migrants from elm leaf curl rosette. Mountain-ash trees are subject to the same pests as apple trees.

Billie's Returns

40 Hogs averaging 200 lbs. .....@ 7½	=$600.00
1,200 lbs. Butter from 4 milking Shorthorn grade cows .....@26	= 312.00
Eggs and Poultry	150.00
1 Cold H.D. sold	200.00
10 Steers fattened	840.00
30 bus. Red Clover Seed..@$7	210.00
125 bus. Wheat .....@80	100.00
	$2,412.00

"Believe me! that's not so bad, Billie. I did not know that you had a gross return over two thousand dollars. You own your place, Billie, don't you?"

"Yes, but there is a mortgage of $1,500 to pay off yet, but that takes only $75.00 interest and it is growing less. I paid off $200 this year."

"Good! that sounds like prosperity all right. But let us be candid and answer me a few questions."

"What did it cost to get these returns? Most of those steers were ones purchased at auction sales. Your wage bills were fairly heavy, were they not? What about interest on investment and your own wages, and more to the point, what did your wife's wages come to?"

"I have not gone into that very fully. But here is a fair report; I thought you would get after me on this score. But I'll swear I'm making good money."

Billie's Expenses for the Farm

Hired Man 8 months .....@$25	$200.00
6 Cattle Purchased .....@ 50	300.00
Running Expenses of Farm	250.00
Grocery bill	100.00
Butcher bill	80.00
Clothing, etc.	60.00
Church	10.00
Grain bo't	300.00
	$1,300.00

"Yes, but you will admit, Billie, that your investment is worth at least $7,500. Now, interest on that for 1 year at 6 per cent. is $450.00. For depreciation of plant, as the manufacturers would say, we must allow 10% of implements and buildings. The land won't depreciate, in fact, it ought to get bigger in value, being so near a growing city. At any rate, 10% of $2,500 is $250.00 and this amount will be none too large when we look over a series of years."

"Oh! you are now getting hang sharp," said he, "I never pay out $250 a year for repairs."

"Did you not build a new house last year, Billie?"

"Well, yes, and it cost me $2,000 and it will last 20 years without repairs."

"It may," I interposed, "but even then that is $100 a year and then you put in nothing for insurance. Have you a water system in? Have you a furnace in your house? These will come in time and it will mean outlay. Then what about your barns, stables, windmills and fences? I guess $250 is little enough."

"Possibly you are right, Mack; I never looked at it in that light before."

"Now then, that accounts for $700. That leaves $1,112—$700 equals $412 for your wages and your wife's. Of course, you earned the $400 and your wife the $12, I suppose!"

"No, Mack, that's wrong. I banked $900."

"Well, Billie, doesn't that include interest on your investment? You don't suppose you would let me have the use of your property for nothing, would you?"

"Now here then, you and your wife are worth only $412 a year and your board! Let us look at Dan Remmer's situation. His income was as follows, so he told me!"

Dan's Returns

650 bbls. Apples .....@$2.25	$1,440.00
Culls and No. 3's retailed	150.00
30 bus. Alsike Clover ..@$7.00	210.00
125 bus. Fall Wheat ..@ .80	100.00
Poultry and Eggs	200.00
Fat Cattle and Hogs turned off	500.00
1 Colt Sold	100.00
Plums, Cherries and Berries	150.00
	$2,850.00

"You will note that Dan gets no returns from dairy products. He keeps a cow or two, but these supply the farm grocery bills.

"Now let us look at his expenditures."

Continued on page 76.

Keeping Fertility Fertile

The Rennie Gold Medal Farm Conserves Its Wealth by Brains and Livestock

By TOM E. DOBBIN

Mother earth, like a good many other mothers, is not half appreciated. Her gifts are taken for granted and we forget that she is wearing out. The thinking farmer never forgets to take this into consideration, and makes the building up of the soil a primary consideration in all his farming operations. In this story of the master management of the Rennie farm at Scarboro, Ont., the writer makes a feature of the fine system of drainage and fertilization that will be of interest to every land-owner. The profits derived from this farm show very attractive proportions, but a more striking fact is that after all this has been taken out of it, the land is richer than it was a quarter of a century ago.

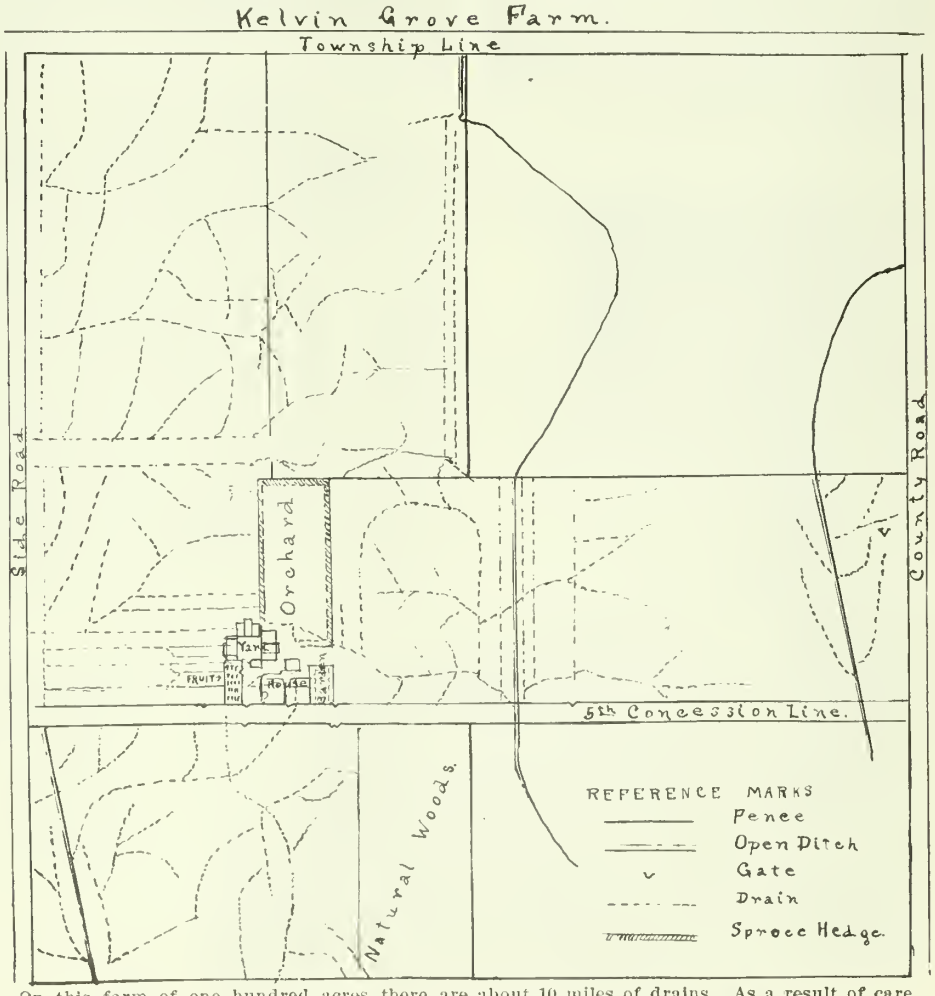
TO ONE farmer, dirt is everything. In fact, plain black dirt is to him the goose that lays the golden egg. In other words the humus on top of his farm, the soil that is the basis of all crops, produces a pay-streak far greater than veins of auriferous ore. The goose, unlike the one in the nursery rhyme, is not killed. Instead, she as fostered, exhorted, encouraged and idealized. Soil is king on the Rennie farm in Scarboro, York County, Ontario. To keep the soil fertile, full of available plant food, is the slogan that prevents the farm riding the farmer to bankruptcy. In unfavorable seasons this plan insures a fair crop, and in ordinary years, the bumper yields from the well-tilled, well-nourished fields make farm operations a pleasure and the business the best one under the sun, bar none.

Situated about fifteen miles from Toronto, and about one mile from Milliken is Kelvin Grove Farm, the premises for which the late Simpson Rennie won a continental reputation. These holdings consist of one hundred and two and a half acres, of which six acres are bush and two and a half orchard. The soil is a rich clay loam, with an admixture of black soil. Till Mr. Rennie improved it by drainage and tillage, there was nothing about this farm to distinguish it from the surrounding farms. Indeed, this farm might well have been regarded as wet. Now there is not a foot of unarable land to be found on the entire premises. The fences, mostly of the straight rail, post, stake and wire variety, are models of good building. The buildings are neat and serviceable, and so well were they built that now after seeing active service for over thirty years they seem to be in as good a state of repair as ever. Paint has been used unsparingly, but with good judgment. The whole farm premises bear witness to the fact that Simpson Rennie was a practical farmer rather than an idealist. He regarded his farm as a manufactory, and to this end he devoted time and thought without limit. Neatness, utility, efficiency are in evidence everywhere. For not only was Mr. Rennie a good farmer himself, but he was skilled in the art of imparting his knowledge of the art to his sons, one of whom, Jas. A., is now on the farm occupied by his father, and the other, Wm. G., is on a farm on the Kennedy Road, a few miles south of the old homestead. The best tribute to Simpson Rennie's worth is that his sons still practise the father's methods and find that his principles bear the test of time and experience.

Mr. Rennie found that it paid to feed his grain on the farm. Experience proved to him that one year with another this method of feeding grain yielded him a profit of about twenty per cent. over the sale of the same grain on the market. Not only did he secure this profit on grain feed, but he was able to sell his best grain for seed at fancy prices, and to replace it with grain that satisfactorily met the requirements of feeding. His own lower grade grain was, of course, fed on his premises. An account kept of time and labor expended demonstrated to his own satisfaction that the cost and trouble of marketing grain were quite as great as that of feeding it. Further, marketing the grain meant the impoverishment of the soil, while feeding it resulted in the steady improvement of the soil.

Crops Get Better Yearly

Not only did they aim to have the land in first-class condition, but they saw to it that it grew only the best paying crops. They sowed none but the best of seed. Their methods were to watch the fields for the best grain. This was laid aside for



On this farm of one hundred acres there are about 10 miles of drains. As a result of care, attention to detail and study of levels there has not been a single failure throughout the entire system in 30 years.

seed. When it was threshed they screened it carefully and then hand-picked the seed. The results of this selection made the Rennie farm famous throughout the continent. In the matter of corn the best cobs were chosen, the ends of the cob broken off, and the selection of seed made from the middle part of the ear. It must not be though that seed of the high order of excellence that Mr. Rennie grew can be obtained readily. Rather, it is the result of persistent selection. There must be a system and the system must be persisted in for years or there will be a speedy and marked falling away. No method works well unless it is well worked. The results obtained on this farm go a long way to establish the fact that the same variety of grain may be grown on land for an indefinite number of years with highly satisfactory results if care be observed, systematically and persistently, in the selection of the seed. To this day the grain of this farm is as of high a grade as in the days when its reputation was in the making.

Further, the value of a good rotation of crops was recognized. Simpson Rennie's rotation was as follows: roots and summer fallow, followed by barley seeded down to clover and timothy mixed. This was followed by peas, barley or wheat and oats. The rotation at present practised is roots and summer fallow, barley or goose wheat seeded down to clover and timothy and oats. The change has been necessitated because of the difficulty in growing peas, because of the weevil. This present rotation, by a system of doubling up, may be changed into a three-year rotation, with attendant advantages of cleaning the soil and increasing its productiveness.

The present owner, W. G. Rennie, as did his well-known father, the late Simpson Rennie, attributes his success to no matter of luck, but to thinking and hard work.

Drainage is Everything

He was amongst the first in his neighborhood to detect the value of thorough drainage. There were those who had learned that wet land will not yield as freely as land freed of surplus moisture, but Mr. Rennie was about the first to practise thorough drainage. His first aim was to obtain a satisfactory outlet for his main drain. This outlet he sought to have as deep as possible. From the outlet he worked back, keeping the grade of the drain uniform. No trouble was spared to observe this precaution. Indeed, in all his drainage system he would not lay a foot of tile unless the grade were uniform. He was prepared to spend a great deal of labor in order that the water might flow at an even rate. Failure in this particular has been the cause of failure in many a drainage system.

The main drain being secured, branches ran from it to every part of the field.

In this way the whole field was drained equally and was ready for tillage at the same time. The fact that after thirty years every drain is in good working order illustrates the soundness of Mr. Rennie's theories.

The aim was to get every drain as deep as possible. The drains on this farm were sunk at least three feet. Later Mr. Rennie advocated even deeper sinking of the drains. His theory was that the deeper the drain the sooner it would work and the wider the area benefited. It may be added, the deeper the area the greater the possibilities of deep tillage and consequently the better the root system. When one remembers that clover was regarded as an essential part of the crop rotation of this farm it is readily seen what a mine of soil wealth is to be found in each of its fields. The thorough drainage goes a long distance towards preventing the heaving of the clover by the frost. Throughout the laying of the tile the water level was used. Mr. Rennie used to say, "It's water that I want to run through those tile. If water will run freely along the track where the tile are to be laid, I have no fear that it will fail when the tile are laid." If the grade be uniform the tile will work freely if there be a fall of but two inches in twenty rods. Of course, this is an extreme case, but when the grade is very close and the work done with care throughout, it can be done successfully. Engineers prefer 3-10 of a foot in a hundred feet. More fail in tile-laying through failing to have the grade uniform, and in placing each tile properly. One mistake in this regard means a blocked drain.

Drain Plan is Kept

The location of each drain was carefully measured and noted in such a way that it could be located at once. On this farm there are about ten miles of drains, and as a result of the care, attention to details, and the study of levels there has not been a single failure throughout the entire system. The results of his system as attested by thirty years' experience prove not only the value of drainage, but the soundness of his theories of how the draining should be done. Not only do the drains work as well as when they were laid first, but the crops have maintained or even advanced upon the splendid yields they made when Mr. Rennie was at the head of affairs.

Finishing Beef Cattle

In the matter of stock husbandry, Mr. Rennie's taste ran to finishing beef cattle and hogs rather than to dairying or to breeding.

His custom was to buy his heifers and his hogs in the fall in order that the finishing might be done by April or May. Here, again Mr. Rennie had a fine chance to use his eye—and his sound judgment. The animals chosen were one or two years old, of the Shorthorn beef type. The condition of an animal was carefully considered before a purchase was made. The points were carefully noted, its constitutional vigor and its general thriftiness duly weighed. Further, he aimed to have his animals so selected that they would group effectively in his stable, and he well knew the inadvisability of having unfavorable contrasts in his herd. Further, this grouping in accordance with size and type, made it all the easier to note the progress the animals made during the time of feeding. The first care that Mr. Rennie exercised on stabling his cattle for the winter, was to give them a thorough treatment with insecticides in order that the animals should waste no energy in fighting vermin.

The Rations

The rations given the feeders consisted of well-cured clover hay, turnips, and when on full feed, 12 lbs. of concentrates per animal. Eternal vigilance and regard for each animal was the price for his success. The selling end was observed with similar care, for Mr. Rennie practised the art of farming, not only because he liked it, but also for the profit that he could make out of it. In order that he might secure the maximum of reward for his thought and care, he studied business and markets as well as grain, soil and animals.

Objected to Ensilage

Mr. Rennie was not an enthusiast in the matter of feeding ensilage. To begin with, he regarded the silo as an expensive building. Further, corn is a crop that requires a great deal of labor, no inconsiderable item these days. Unless the corn is kept clean, it opens a fine avenue for weeds. The filling of the silo is an expensive and troublesome affair. Further, now that it is regarded as necessary to have the corn matured before it is placed in the silo, it must be noted that the silage crop is really another grain crop that takes a great deal out of the soil that must be replaced or the farm is sure to suffer. Further, when the silo is filled it is filled with fodder of an inferior quality, when compared with clover hay. Many and royal were the battles that Mr. Rennie had with his fellow-farmers at Institute meetings on this point. To this day there are plenty of farmers, who are accustomed to think rather than to follow custom, who believe that Simpson Rennie was right.

These premises may be regarded as a farm factory where the most scientific agricultural principles are applied. The aim all along has been not to slight a single ridge of grain, and not to skimp a single furrow. The best of other successful farmers' experience is sought for and applied. Waste is avoided and every product is finished as far as possible, in this way securing all the profits available. That the best known principles have been learned and applied is borne out by the fact that this farm has not only held its own for nearly forty years, but that it is even more productive now than it was a quarter of a century ago.

A Hostel For Girl Berry Pickers

A Woman Discovers a New Way of Solving the Fruit Growers' Labor Problem and Giving the City Girl a Fresh Air Summer

By ETHYL MUNROE

A district planted with orchards like this can employ more laborers than the neighborhood supplies,—and would make an ideal summer resort for the office girl.

Here is a new solution of the farm labor problem during the fruit-picking season. Mrs. Hamilton's hostel for girl-farmers at Lorne Park might well be copied in every fruit-growing district in Canada, and the writer points very clearly the way to a broader field for girl farmers. The possibility of having a good "home-made" bakery and laundry in charge of capable girls, established in the community, should also be a bright prospect for the farm housekeeper who has enough to do without the family washing and bread-making.

IN the fruit-growing district of Canada there are hundreds of farmers harassed through the whole picking season with the worry of getting help when they want it. In the cities and industrial centres there are hundreds of girls who can't afford a holiday but are actually suffering for the open air and a few weeks of country life. It just required a woman's originality and initiative to show how these could be played into each other's hands to the mutual benefit of everyone concerned.

Mrs. Hamilton's summer home is on a fruit farm at Lorne Park, Ontario, and eight years' experience in all the common difficulties of getting steady help during the busy season brought her to realize what it would mean to the farmers if a number of pickers could be brought into the neighborhood for a few weeks every summer. Meanwhile she was constantly receiving letters from friends in England asking how a girl could get out into the rural districts of Canada and earn her living in the open,—the English girl's love of an out-door life is the leaven that set the "farm industries for women" movement working in Canada. It requires some engineering to evolve a workable plan, but the plan evolved has worked, and so well that it is hard to tell where it may end.

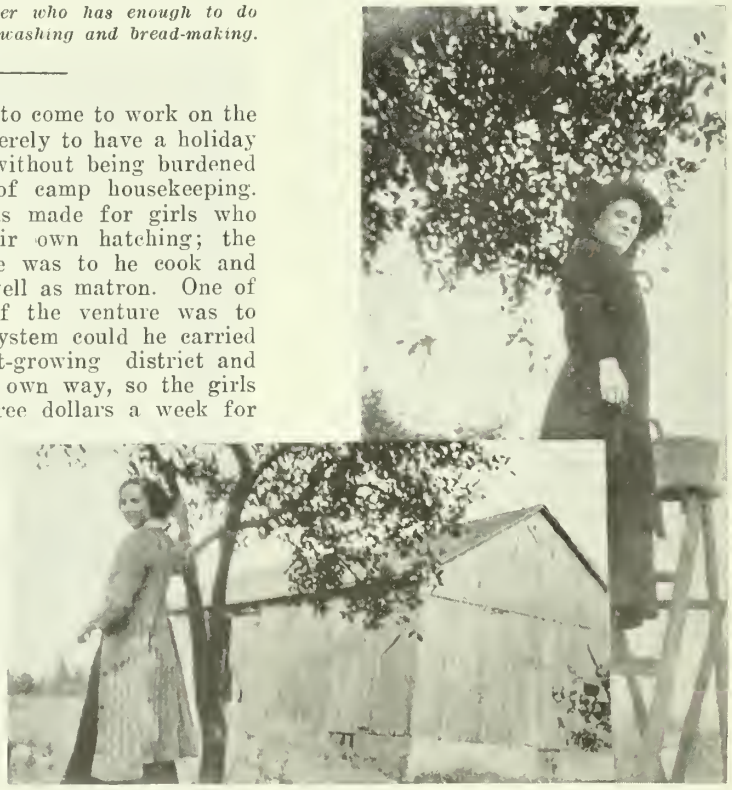
The Thing Support Itself

Mrs. Hamilton allotted $500 to the experiment, and rented two houses, or a house and a shack in the neighborhood of Lorne Park, a district of fruit farms. She furnished these buildings to make comfortable dormitories, a kitchen and dining-room, engaged a matron, and toward the end of June opened her hostel for girls wishing to come to work on the fruit farms or merely to have a holiday in the country, without being burdened with the work of camp housekeeping. No provision was made for girls who want to do their own batching; the woman in charge was to be cook and housekeeper as well as matron. One of the first aims of the venture was to prove that the system could be carried out in any fruit-growing district and made to pay its own way, so the girls were charged three dollars a week for their board, and the dates for taking in new girls arranged far enough ahead to keep the thirty-two beds filled throughout the season, or until the beginning of September. After paying rent, grocer's and butcher's bills the accounts showed a surplus to be turned back into the fund for the next year.

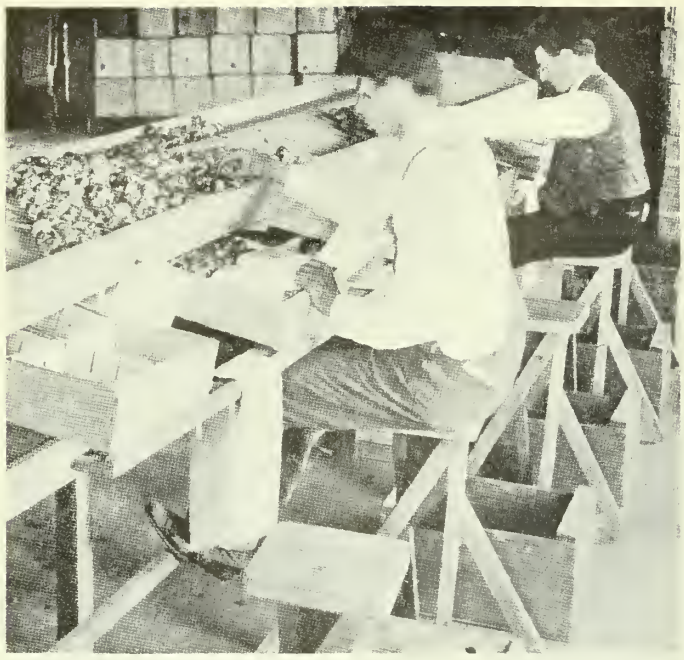
When the girls come to the hostel, or rather as soon as their applications are accepted, Mrs. Hamilton becomes a sort of distributing centre. It requires considerable organization,—not to keep the girls busy, but to supply the different farmers with pickers just when they want them. Speaking of this Mrs. Hamilton said:

"I have never yet had girls enough, but when several farmers phone to see if they can have so many pickers for a certain day, we try to even things up to keep them all off anxious seat. With my new hostel opened, I hope to be able to supply the demand more easily this year."

Besides getting employment for girls in her neighborhood, Mrs. Hamilton has placed several in other parts of the Province. In doing this she is as particular to know something about the people to whom she sends the girl, as she is about the type of girl herself,—and no girl is admitted to the organization without a certificate of character.



Residents of the Lorne Park hostel. This barn was fitted up for a dormitory the first year.



A splendid type of packing table. Until recently few Canadian houses provided seats for their workers.

Last year a number of girls were sent to the Grimsby district, and after the berry picking season, several from the hostel went on to Niagara-on-the-Lake to pack peaches. They worked at this during the whole season, at ten cents an hour and board, and when the peach-packing was done a few went right on at packing apples. The wages for this are a little higher. One particularly fine girl, who had had some previous training in an agricultural college in England, went to Guelph when the picking season ended at Lorne Park and is now doing excellent work assisting one of the professors on the College farm. Two girls who came to the hostel late in the season, when the demand for pickers was rather slack on account of the dry weather, found work digging potatoes. These girls are now working as stenographers in town and have planned to take their holidays this year in the peach-packing season. Several others added considerable to their holiday income by putting in odd hours weeding asparagus and onion beds, and hoeing.

Have You Ever Thought of This?

Possibly because so many of her girls are going into packing houses, Mrs. Hamilton has taken a keen interest in prevailing conditions. Practically none of the Canadian houses provide seats for their workers. When she explained to a fruit-growers' association that it was not right for any man or woman to stand at work for ten hours she was told that a packer could not do efficient work sitting. She wrote to packers in California and Oregon and found that they were doing it all the time in the best houses there. The objection in the more poorly equipped establishments is that a packer would waste time jumping up from a stool every time he wanted to change baskets, an objection easily overruled in this age of efficiency by the fact that the economical proprietor would put in a feeding machine, or until this was possible he would find that it paid to hire an unskilled laborer to hand baskets to and from the packers.

Another distressing practice was observed in several wrapping - houses. The choice apples, pears and peaches, each wrapped in tissue paper and packed in boxes, are becoming very popular for table desserts, and are not often pared before being eaten. The wrapper has before him a pile of the tissue paper squares, and often finds it difficult to pick up one without moistening the fingers, so in the majority of cases they go to the mouth every time an apple is wrapped. Nothing need be said of the undesirability and possible danger to the consumer as well as the worker's discomfort before the day is over.

Mrs. Hamilton is enthusiastic over the possibilities of the fruit industry for women. "They might even go into the picking of large fruits more extensively than they do," she said. "Girls don't mind climbing a tree or a step-ladder, and with peach-trees, at least, very little climbing is necessary. I remember walking through an orchard where several men were picking peaches, and hearing the steady thud of the fruit dropping into the baskets, it wasn't hard to picture the bruises appearing in a week or two. These men were, of course, unskilled workers, but women accustomed to handling delicate things in their kitchens would seldom need to be taught carefulness in handling fruit. Then if the better class of women go into the work they will be likely to offer valuable suggestions in putting up fancy stuff."

Mrs. L. A. Hamilton, whose hostel for girl farmers is the only one of its kind in Canada.

Another field particularly adapted to women is greenhouse work. Last year two of the girls who went to Grimsby were so successful during the fruit season that Mrs. Hamilton got them into a greenhouse for the winter, where their work shows excellent results. From a financial standpoint this is the ideal branch of agriculture for women. The difficulty is that few girls have the necessary capital to buy land in a district adapted to gardening under glass. If a settlement were formed, it could be made profitable to rent land and build greenhouse, but in any case the girl farmer will find it most congenial work whether she has a plant of her own or works for someone else.

Can Fruit-Growers Extend the Plant?

It must be remembered that the hostels at Lorne Park were not established for any private consideration. That there might be no understanding that the girls were brought to the neighborhood to work on Mr. Hamilton's farm, he was not given any help from the hostel the first year and only the younger girls the second. The object was to help the fruit-growers, to give city girls an opportunity of getting out into the country for a few weeks without expense and to show that the scheme can be made self-supporting and practicable in any fruit-growing district. The surplus in the treasury, Mrs. Hamilton intends to use this year, to increase the girls' comfort. There will be a tennis-court, and Mr. Hamilton is lending a barn to be fitted up as a gymnasium. He has built a new dormitory, having all the advantages of outdoor sleeping quarters with the comfort of good floors and mosquito screens. The Hydro is going through Lorne Park and the new building will have electric lights and a telephone. "In time," Mrs. Hamilton said, "I hope to be able to reduce the price of board from three to two-and-a-half dollars a week. If an organization of fruit-growers were carrying out the plan and employing thirty or forty girls steadily they could easily do this."

The point emphasized most strongly with regard to the extension of the work was that fruit-growers in any district by co-operating to support such an institution would find it an easy way of solving their labor problem. Pickers have before now been brought to the farms to board, making extra work for the already over-burdened farmer's wife and being under no discipline and responsible to no authority have frequently been the cause of no little anxiety. In most rural districts there is a certain hoodlum element that has to be reckoned with so it is most important to secure a matron with a mother's heart and a general's

discipline and to bring out only a class of girls who will be a valuable adjunct to the community. Mrs. Hamilton suggests that members of the local Women's Institute might form a sort of Motherhood Board to take an interest in the welfare of the girls and at the same time to support the matron.

The girls of the Lorne Park hostel have never been a disappointment. Some of them are domestic servants, a great many are stenographers, there have been a few music-teachers and trained nurses, several factory girls. "It is to be hoped," said Mrs. Hamilton, "that something may be done in the near future to enable such girls to establish themselves on farm settlements in our midst. They would probably fill a need in the development of small market gardens, fruit, bee, and poultry farms. Since the hostel closed, two of the girls who were with us as pickers in both 1912 and 1913 have settled in the main building for the winter and have established what promises to be a very successful bakery, making excellent home-made bread and cakes. They intend also to start a small market garden in the spring. There is great demand for a good laundry in the district and we hope the hostel may develop, another year in that direction."

The greatest difficulty Mrs. Hamilton met was the long hours. The farmers usually came with their wagons for the girls in the morning, and often drove them home in the evening, but there were never enough pickers to get along with anything shorter than a ten-hour day. This she considers a mistake from both viewpoints. The girls could earn enough money and have more time for the recreation they need if the working day could be reduced to five or six hours; and the farmers would get better work. It is always during the last two hours of the day that the little sticks and leaves get into the baskets. Out-of-door work is the most healthful exercise in the world where it is congenial, but this constant speeding up of the physical that has such a grip on the lives of many farmers is responsible for no end of physical wrecks, and is crushing the spirit right out of our social life.

Courtship Incog

How John Terris Competed Against Himself for the Girl He Loved---and Won

By QUENTIN QUARREN. Illustrated by T W. MITCHELL

FOR FIVE years John Robinson Terris had given every waking moment to the building of railroads, the development of mines, and the financing of a succession of huge enterprises. His complete absorption had brought two results; the accumulation of a large fortune and a decidedly serious breakdown in health.

It was partly on his physician's advice that he accepted the invitation of Purvis to spend a couple of weeks at the country home of the latter near Montreal. Purvis was an inveterate lion-hunter. His sole object in life apparently was to keep his house peopled with personages of note. Fame never sought out an individual in any walk of life without bringing along Percival Purvis in its wake with an invitation in his outstretched palm. He had camped on the trail of Terris for three years, much to the annoyance of that hard-working, society-shunning young man. It is doubtful, therefore, if Terris would have allowed himself to be booked for two weeks with Purvis but for one circumstance. The latter made it very clear that Alice Renfrew would be one of the party.

Several days had passed since Terris' arrival and each succeeding hour brought him an increasing sense of discomfort. He felt out of place with the group of notabilities that the persistent Purvis had gathered about him. Their talk was all of art, sports, society, and bridge. There was not one of the party with whom he could discuss money, rates, or the complex problems of railroad building. Whenever he sought the society of Alice Renfrew, he would be straightway dragged into a strenuous game of tennis or a monotonous round of auction, both of which forms of recreation he detested heartily.

On the morning of the fourth day, he elected to go for a solitary stroll. He felt that he needed a rest from the sharp intellectual pace maintained by the rest of the party. In addition, he wanted an opportunity of debating with himself a very important matter, viz., whether he should offer to share the rest of his life with a person whose tastes apparently stopped with the recreations of polite society. Returning with the momentous question still undecided, he was striding along the wooded edge of a steep slope surrounding the tennis court when he came upon a girl seated on horseback and intently studying the party on the court below through opera glasses. She turned as he approached and in her haste to conceal the glasses allowed them to slip from her hand. Terris politely stooped to recover them.

"I feel very guilty at being caught trespassing," said the girl. And a decidedly pretty girl she was. Even with his mind filled with the perfections of Alice Renfrew, Terris could appreciate that fact. "I was riding by and the temptation to see all the great people down there proved too much for me."

"It was lucky you had your opera glasses with you," said Terris, returning them. There was a suspicious twinkle in his eyes as he added: "I suppose you always carry them with you in the mornings?"

The girl responded with a laugh, in which Terris joined. "I might as well own up," she said, "that I rode here with the express purpose of seeing what I could. I am a very curious person."

"They are rather an interesting lot," said Terris, indicating the gaily attired group on the tennis court, echoes of whose laughter and conversation reached the top of the slope. "Some of them are so clever that it's a relief for slower-witted people to get away from them. I'm just returning from a short respite."

"Then you are one of the party and know them all?" said the girl eagerly. "I do wish you would tell me who each one is."

She had the most elusive dimples which came and went with each change of expression. Terris found it a pleasure to watch her.

"I'll be only too pleased to tell you all about them," he said. ('Do you see the tall young fellow with the red hair? that's Jimmy Grissold. He had an industrious father who left him more millions than he knows what to do with; and Jimmy is pretty knowing when it comes to spending money. The stout old party with the beard and grey fedora is Mr. Elmer Symons, husband of Mrs. Elmer Symons. You've probably heard of her. The man with the panama beside Symons is Vaughan-Tipton, the novelist. That tall chap walking over to the far side is Arthur Trevanook, the Arctic explorer—between ourselves, the most interesting man of the lot. Right behind him is Captain Carseadden, hero of the affair at Tawajii—," and so on through a lengthy list.

"But where," asked the girl at the finish, "where is Mr. Terris?"

Terris scanned the course with a creditable show of thoroughness.

"I don't see him there," he said, finally.

The girl was apparently quite disappointed.

"I wanted to see him more than any of the others," she announced. "My father knows him well. He worked under father on a little railway quite a number of years ago. Father is president of the road now, but I guess Mr. Terris has forgotten that it even exists. He and I were great friends when I was a very, very small girl. That is why I have been so curious about him."

Terris surveyed the girl with a new interest.

"This must be little Ida Randolph," he said to himself. "And she doesn't remember me any more than I remember her. And, by George, what a little beauty she has become!"

Aloud, he asked: "Is your father by any chance Frederick Randolph?"

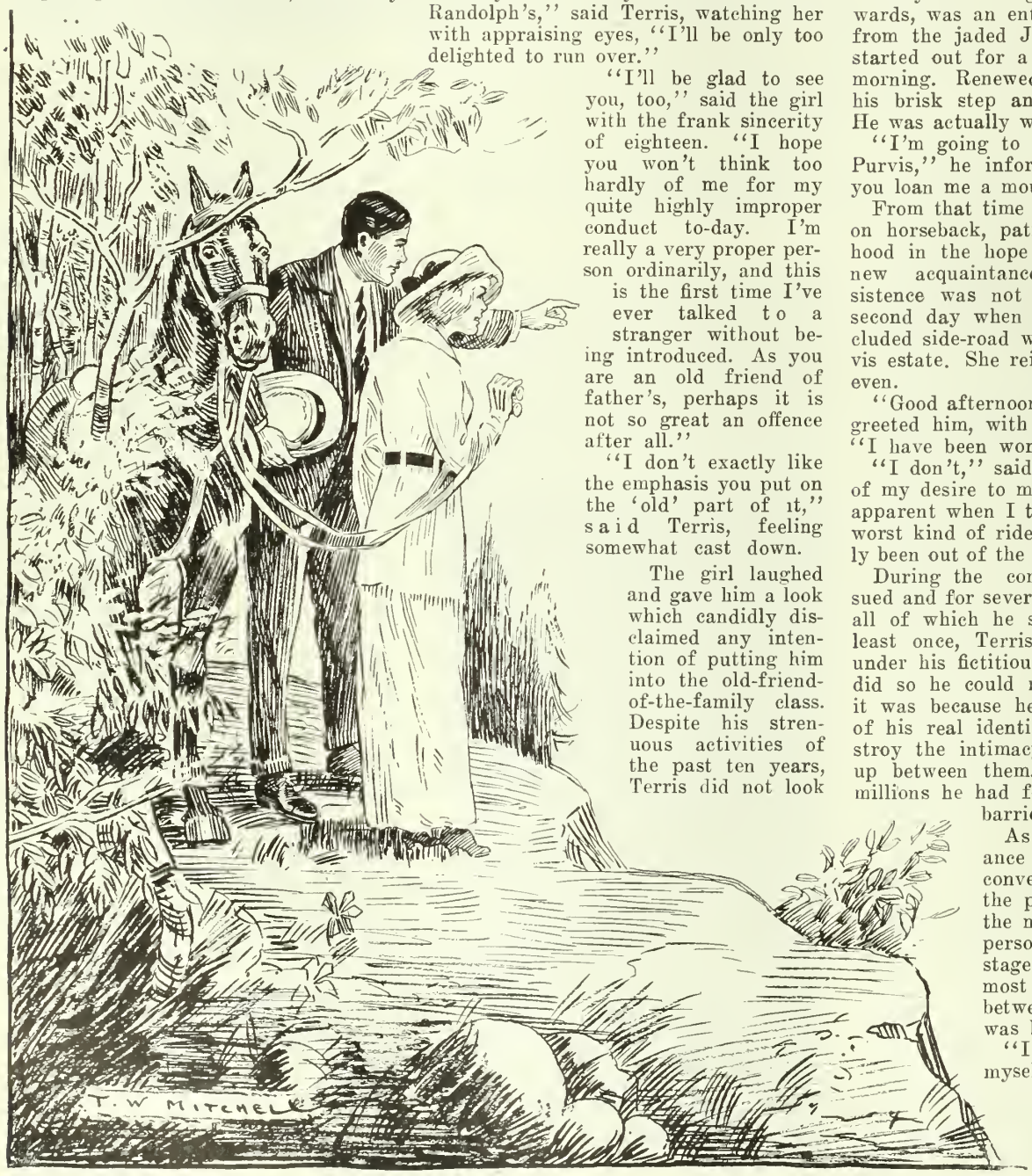
"Yes," replied the girl.

Terris' mind harked back twelve years to the time when, as a promising lad of twenty-one, he had worked under Frederick Randolph, then general freight agent for the C.L.O., a railway with limited mileage and equally limited prospects of growth. He remembered his frequent visits to the Randolph home where he had been first favorite with the flaxen-haired six-year-old daughter. On glancing back it seemed but a few months, so rapidly had the time passed during his steady climb upward. It was almost inconceivable that she should have developed in so short a space of time into this very attractive and modish young person. An old inclination to tease prompted him to say:

"I know your father but it is doubtful if he would remember me. I've had something to do with railroads at one time and another. I'm a mining engineer, you see. My name is—John Robinson."

"You must come and see father then," said the girl. "We have the next place along the road and father is running down for the week-end. He will be glad to see you."

"If you will add your welcome to Mr. Randolph's," said Terris, watching her with appraising eyes, "I'll be only too delighted to run over."



"I'll be glad to see you, too," said the girl with the frank sincerity of eighteen. "I hope you won't think too hardly of me for my quite highly improper conduct to-day. I'm really a very proper person ordinarily, and this is the first time I've ever talked to a stranger without being introduced. As you are an old friend of father's, perhaps it is not so great an offence after all."

"I don't exactly like the emphasis you put on the 'old' part of it," said Terris, feeling somewhat cast down.

The girl laughed and gave him a look which candidly disclaimed any intention of putting him into the old-friend-of-the-family class. Despite his strenuous activities of the past ten years, Terris did not look a day older than thirty. He was perhaps more distinguished and masterful in appearance than handsome, but, there was something distinctly attractive about his square, clear-cut features, discerning dark eyes, and abundant brown hair. In her own mind the girl had already classed him as "thrillingly interesting"; which by the way, is the basis of strongest appeal for eager eighteen.

"They say that Mr. Terris is going to marry that beautiful Miss Renfrew," she went on, "Do you by any chance know if it is true?"

Terris suddenly came to a realization that the decision he had been grappling with all morning had been subconsciously made; how or why he did not know.

"He is not going to marry Miss Renfrew," he announced. "I happen to know that."

The John Terris, who sprang up the steps of the broad piazza of the Purvis country home a good half hour afterwards, was an entirely different person from the jaded John Terris, who had started out for a tramp earlier in the morning. Renewed interest showed in his brisk step and his erect carriage. He was actually whistling.

"I'm going to start to ride a little, Purvis," he informed his host. "Can you loan me a mount?"

From that time on Terris fairly lived on horseback, patrolling the neighborhood in the hope of encountering his new acquaintance again. His persistence was not rewarded until the second day when he met her on a secluded side-road which skirted the Purvis estate. She reined up until he drew even.

"Good afternoon, Mr. Robinson," she greeted him, with a smile of welcome. "I have been wondering if you rode."

"I don't," said Terris. "The depth of my desire to meet you again will be apparent when I tell you that I am the worst kind of rider and that I've hardly been out of the saddle for two days."

During the conversation which ensued and for several days succeeding, on all of which he saw Ida Randolph at least once, Terris continued to travel under his fictitious name. Just why he did so he could not explain. Perhaps it was because he felt that knowledge of his real identity would tend to destroy the intimacy that was springing up between them. The possession of millions he had found to be a distinct barrier to friendship.

As it was their acquaintance ripened rapidly, and conversation soon rose from the plane of small talk to the more intimate basis of personal topics. Finally the stage was reached when the most interesting topic of all between a man and a maid was broached—matrimony.

"I must marry for money myself," she confessed. "We're poor as church mice at home. Dad's income just bare-

ly keeps us going now, and what's going to happen to us when my three younger sisters get a little older and need expensive frocks and things? No, I must come to the rescue myself. And there's only one way to do it. I'm going to pick out some man with perfect heaps of money and make desperate love to him."

"Why not try it on Terris?" he suggested dryly.

She glanced at him with half amused petulance. "I'm going to tell you something that you will probably think very ridiculous," she said. "Mother has suggested Mr. Terris. She talks 'the rich Mr. Terris' to me all the time, and as soon as dad comes down he will be sent out post haste to capture the man and bring him over to meet me. Oh, there is a regular conspiracy on foot."

"Lucky Terris," said John. "But really it is kind of rough on you, Miss Randolph. Isn't he rather old?"

"I am not so sure," said the girl brushing away a waving tendril of hair, which the wind had blown across her cheek. "I don't think I care for mere boys very much."

"Terris, by the way, is just about my own age, I should judge," said John. "If you concede eligibility to him, you cannot deny it to me."

"Are you eligible in the other respect?" she asked, lightly, but with a suspicion of a more serious strain behind the question.

"In regard to money: Did you ever hear of an engineer who had enough to make him the prey of worldly-minded young ladies?" he parried.

"No. I suppose not," said the girl. John thought he detected a trace of regret in her tone.

They met again next day and Ida felt an unexpected and wholly incomprehensible thrill as he rode up. She had come to look forward to their rides with a sense of pleasurable anticipation. The stories he had told her, drawn from his wide experience, had enhanced her fancy and had served to make him quite a romantic figure in her eyes. Her interest was fanned by the knowledge that her mother, if she knew, would sternly disapprove of any such acquaintance. Mrs. Randolph was frankly determined that her daughter should make a brilliant alliance from a purely worldly point of view. Ida knew full well what she woud say on the score of one John Robinson, in whose defence neither Burke nor Bradstreet could be summoned as witnesses. The name would ring hopelessly plebeian in the ears of the ambitious Mrs. Randolph.

"Daddy comes down to-morrow," she informed him. "So I suppose now the plot to entrap poor Mr. Terris will develop."

"Now, I wonder," said John to himself, "I wonder if she found she could have John Terris, would she ever think again of John Robinson, It is worth finding out."

"I am going away to-morrow," he announced aloud.

That night he requisitioned one of Purvis' cars and drove in to Montreal where he hunted up his old superior, Frederick Randolph. The latter emerged from the ensuing interview in a state of mingled elation and perplexity.

"I wish you every luck," he said, shaking Terris' hand cordially at parting. "But it is so very unexpected that I can't make it out at all."

The next afternoon Purvis strolled out of the house and joined a group of his guests.

"Somebody called up on the 'phone about an hour ago and asked for a Mr. Robinson," he said. "No one expected here of that name."

"Who was it?" asked Terris, quickly.

"Don't know. A girl's voice," replied Purvis. "Told her there was no one here of that name."

Terris lost no time in procuring a mount. He proceeded at once to the spot where he had first seen Ida and there he found her again. She was seated on her big grey horse and was looking across the empty tennis court with an air which seemed to spell dejection. Terris observed the look which sprang into her eyes as he cantered up; and his hopes rose high.

"I thought you had gone without saying good-bye to me," she said, reproachfully.

"Surely you do not think so badly of me as that?"

"I am afraid I did something you won't approve," said Ida, "I telephoned to the house and asked for you. They told me there was no one there by the name of John Robinson."

"It was a mistake," interposed Terris.

"I wanted to see you very badly. Something very, very strange has happened. Daddy arrived at noon to-day and it seems that Mr. Terris called on him last night in Montreal and asked his permission to—pay his addresses to me, I don't know where he could have seen me, but it seems that he has seen me quite often. And he professes to be a little bit in love. Mother insists that I must accept him."

John edged his horse up as close to her's as he could.

"It is certainly very strange," he said. "It would be a good match for you."

"But I don't want a good match," said Ida, on the verge of tears. "I can't marry a man I have never seen. I am afraid of him. And I know I could never love him."

"You must decide for yourself what answer you will give Mr. Terris," said John. "But before reaching that decision you must hear me. It would not be fair to ask you to marry me, Ida. I realize that only too well. What can I offer you to compensate for Terris' millions? But, Ida, I can't go away without telling you that I love you."

There was an eloquent pause. Ida found the courage at last to look steadily into his eyes.

"I wouldn't want any compensation for the loss of Mr. Terris and his money," she said. "I just want—you."

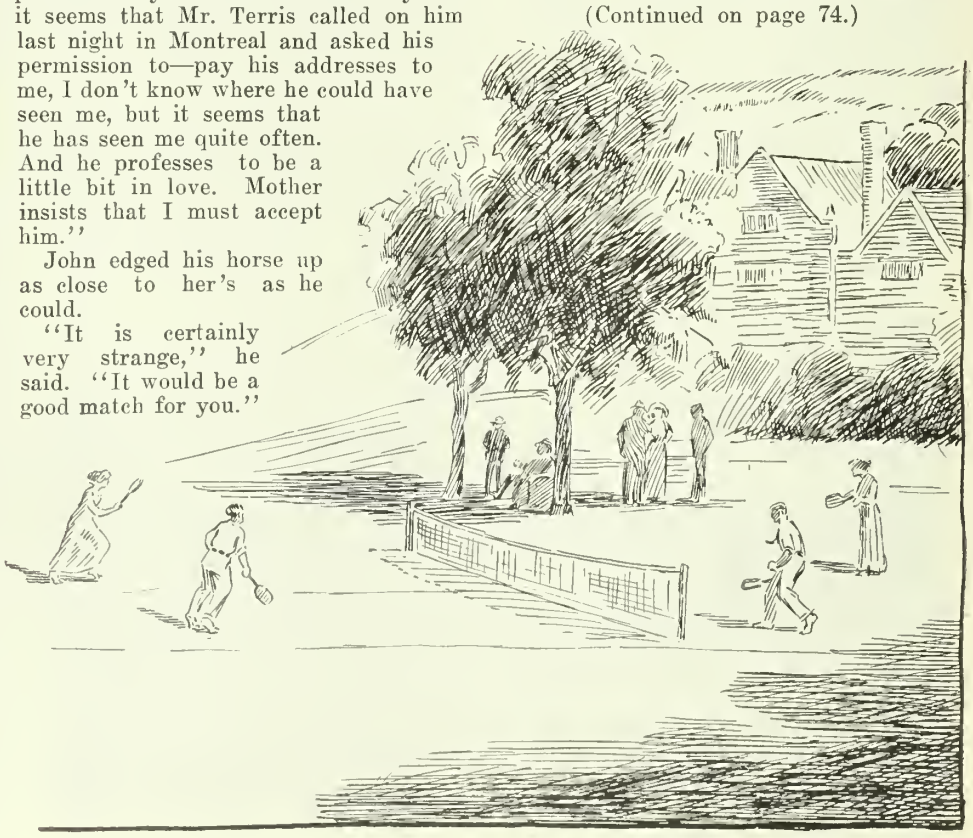
Terris arrived at the Randolph home that evening shortly after the enactment of a rather stormy scene. When one of the wealthiest men in the country, an old friend to boot, has asked for the hand of your daughter in marriage, and the said daughter comes out with the statement that she has already accepted an unknown, professedly poor and apparently plebeian fellow of the name of John Robinson, and very emphatically affirms her intention to keeping her troth, one's temper is apt to become unsettled.

Frederick Randolph greeted Terris with a distrait air.

"Glad to see you, John," he said. "The rest of the family will be down immediately."

Mrs. Randolph stepped into the room a moment afterward followed by a vision in white, which fairly took

(Continued on page 74.)



Holstein herd and up-to-date dairy barns. Note the shed at the corner for loading or unloading the cream cans.

Modern Ways in Dairy Products

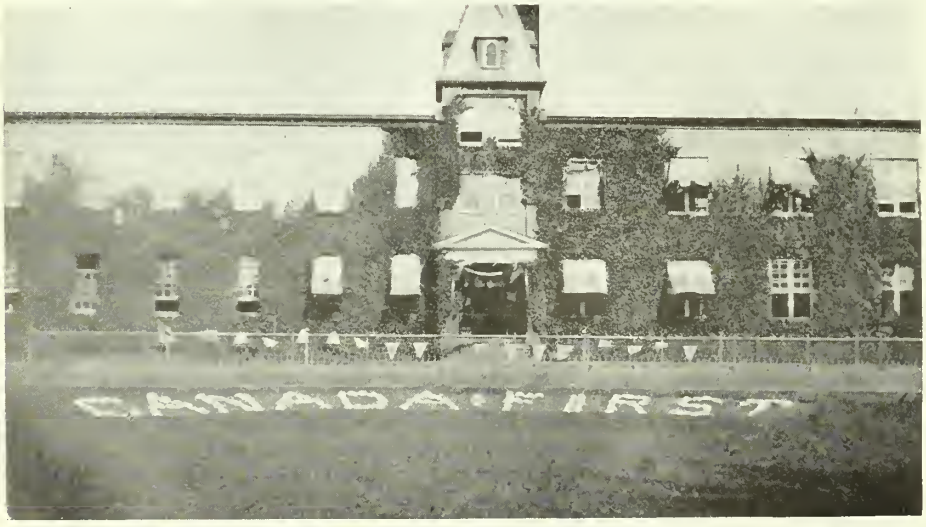
Canadians Use Over Two and a Half Million Dollars' Worth of Ice Cream---Milk Powder and Condensed Milk Factories Cater to the Home Trade

By PROF. H. H. DEAN

The third article of our series by Prof. Dean sums up the present-day dairy situation in facts significant to every Canadian farmer. The ice cream and condensed milk trade promises a fast-growing market, while the demand for certified milk makes it worth while to have the most up-to-date equipment. Sanitary stables, milk houses and even milking machines promise to become the rule rather than the exception on Canadian farms in another year or two.

DIVERSITY of production and manufacture is a characteristic of the present era in dairying. Formerly people were satisfied with a few things. With the increase of wealth, has come increased wants. In spite of the preachings of modern economists to the effect that mankind should decrease the number of his wants in order to secure happiness, the great mass of mankind and womankind multiply their wants. Which of these two doctrines is correct, we shall not attempt to decide; but the fact is, human wants multiply, and the dairy farmer who wishes to improve his financial returns on the farm should study these wants and desires, cater to them so far as possible, and increase his profits by so doing.

The increase in urban or city population, and the decrease in rural or country population, has brought about an unprecedented condition so far as production and consumption of food products are concerned. This is particularly the case with reference to dairy products, causing a very marked increase in demand for milk and cream, particularly in towns and cities during the winter months. It has not been possible for our dairy farmers to keep pace with this demand for fresh sweet milk and cream. In order to cope with the situation, large companies have been formed to purchase the milk and cream from producers scattered over a wide territory, and distribute the same to consumers. The smaller towns are still supplied by direct distribution from the nearby farm, but the tendency in all lines is for concentration of capital in big concerns, thus controlling the market.



Condensed Milk factory at Aylmer, Ontario.

One of the oldest and most successful of the city dairy companies is that of the Copenhagen Milk Supply Co., Denmark. One of the workmen of a philanthropic gentleman of Copenhagen was refused milk at one of the milk depots of that city on the ground that he did not purchase beer from the proprietor, consequently no milk would be sold to this workman for his children. When this was told to the philanthropist he at once decided that this must be changed—the working people must be able to buy milk without being under the necessity of buying beer. A company was formed, a building erected, and the necessary machinery provided to supply milk at cost price, plus five per cent. on the capital invested, to consumers in Copenhagen. Contracts were made with farmers for a supply of milk, experts were sent to the farms to advise milk producers as to methods of feeding and caring for milk, veterinarians were employed to inspect the herds and stables, the spread of contagious diseases or milk from sick cows

was guarded against by agreeing to pay the farmer the usual price for such milk kept on the farm, provided notice were given in such cases; the help employed in the city dairy were paid their usual wages during absence in cases of sickness or exposure to contagion that might contaminate the milk. All this was done at minimum cost—five per cent. on capital invested and the actual operating expenses. In this manner the citizens of Copenhagen were supplied with excellent milk at a low price, and the farmers were paid a fair price for their milk. Thus the two-fold danger of monopoly was guarded against, viz., low price to the producer and high price to the consumer. This milk supply company of Copenhagen was the parent of all similar companies the world over. Since then we have city dairy plants in nearly all large cities of the civilized world; but in some cases the ideal of the founder of this system has not been carried out. This ideal may be stated in a few words—to pay such a price for milk as would encourage the producer to furnish only the highest grade of milk, and to reduce operating expenses to such a low point that consumers would be able to purchase first-grade milk at a reasonable price. So nearly has this ideal been realized that we consider it safe to say that no class of dairy farmers receive greater remuneration for their milk than do these Danish farmers, nor are any farmers less hampered by ill-advised restrictions; and at the same time, consumers can buy good milk at lower cost in Copenhagen than in any city the writer knows of.

This leads up to the question of whether it is better to have the milk and cream supply of cities furnished and controlled by the municipality or by large companies. It is agreed by all who have studied the question that a milk supply by small dealers and in small shops is the least desirable form for a city milk supply, for the reason that these cannot be properly supervised; hence the danger of contaminated milk is much greater under these conditions.

A convenient arrangement of dairy buildings. No material makes a more sanitary milk house, or milk room than cement.

Municipal Control

It is argued by those who favor municipal production and sale that the cases of milk supply and water supply are analogous. The first stage of water supply in towns and cities is that of obtaining water from springs and wells, each person securing their own supply in their own way. As population increased, the local water supply became poisoned, and to protect themselves, water was purchased from some company or corporation who agreed to bring an adequate supply of water from a distance through pipes, thus eliminating the dangers from the local springs and wells.

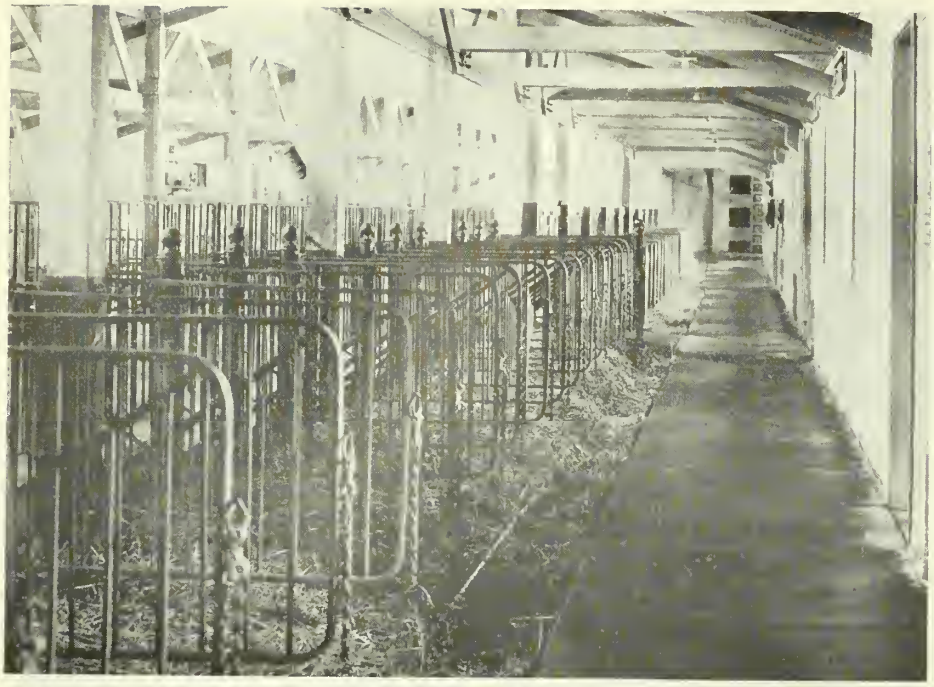
This proved to be such a remunerative business for suppliers that people saw it would be an advantage to them to own and control their water supply, and furnish it at cost; or if there were any profits in the business, these should be applied in improving the supply or in cheapening the rate charged for water, or be used for some other municipal purpose. Hence many of even the smaller towns own not only the water system, but also electric light, gas, street railways, and other franchises.

It is claimed that every argument which has been advanced in favor of municipally or people-owned water supply is equally valid for a municipal milk control. About the only element of danger is the question of "graft." However, it is doubtful if grafts would grow any better in milk than they would in water. Personally we look for the development and application of the idea of a people-owned milk supply, whereby the milk in towns and cities would be sold at cost, thus reducing the high cost of living and insuring healthful milk to rich and poor of the life-giving fluid. The milk may be purchased from individual farmers as at present, or it may be at least partially produced on large farms owned by the municipality. It is reported that Berlin (Germany) has recently adopted municipal milk-supply for the poor of that city.

The ice harvest is a piece of work too often neglected by the mixed farmer. It is one of the best economizers and labor savers in farm dairying.

Company Control

This system is being introduced in all Canadian cities where not already established. Briefly the plan is for capitalists to form a strong financial concern, erect suitable buildings in the city or town where it is proposed to sell milk, contract with farmers in the vicinity or at distances of 100 to 200 miles from the city to furnish milk, arrange for distribution, and conduct the business as in the case of any other mercantile concern. In some cases, inspection of the farms and milk is arranged for, but usually this is left to the health officers of the city; hence a division of responsibility takes place, and the dangers increased of conflict by authorities and inferior supervision. It would seem to be reasonable that if the municipality is responsible for the character of milk sold to citizens



A modern sanitary cow stable.

that it would be better to assume full control rather than divide the responsibility with a company or dealer.

The greater danger of milk companies is that they are likely to screw the price down to an unprofitable basis for the farmer and raise the price unduly to the consumer. When once a company has secured control of the milk supply of any city, there is nothing, except municipal ownership, which can save the people, unless it be a "milk strike" such as has been recently witnessed in a Canadian city. This method is of doubtful value. Why not a "meat strike," an "egg strike," or any other food strike?

Are Milk Standards Advisable?

The Ontario Milk Act of 1911 authorizes every municipality to pass by-laws regulating milk produced for sale, offered for sale or sold within the municipality. Section (5) of this Act reads:—

> "The Council of every municipality is hereby authorized to enact by-laws fixing the standard for butter fat and total solids of milk sold in such municipality; but no milk shall be sold for human consumption which contains less than twelve per cent. of solids, of which three per cent. shall be butter fat."

A great deal has been written for and against milk standards. It is argued by those who favor them that unless a definite standard be fixed by law, milk will be adulterated, or sold, which is much below that required in good, nourishing milk. Those who do not favor standards say that a just standard is impossible, and that no one can say what is the limits of variation in normal cows' milk. They agree further that if the standard is made too high, much of the milk given by the highest-producing cows will fall below the standard, and injustice is done the owners of such cows. On the other hand, if made too low, those having milk of comparatively high chemical composition may add water, or skim-milk, or remove cream in order to pass the legal requirement. It is claimed that milk standards have been the cause of more roguery than any other form of dairy legislation. In this multitude of counselors there is confusion. While it would seem reasonable to exact a certain chemical composition in the milk sold for direct human consumption, there are many difficulties in the way of enforcing the requirement, and grave injustice may result in some cases, because milk may vary considerably in composition from day to day from unknown causes, and it is difficult, if not impossible, to guarantee the composition of milk, except each lot of the milk be standardized. To standardize milk it is customary to use what is called the diagonal square method. For example, if it be desired to obtain 1,000 lbs. of milk testing 4 per cent. fat from two milks testing 5 and 3.5 per cent. fat, proceed as follows:—Draw a square, placing the percentages of fat in the milks on hand at the left corners and the required in the centre, then subtract diagonally on the square:

The mix must be in the proportions of .5 parts of the 5 per cent. milk and 1 part of the 3.5 per cent. milk; or, there would be

$$\frac{.5}{1.5} \times 1{,}000 = 333 \text{ lbs. of } 5\% \text{ milk and}$$

$$\frac{1}{1.5} \times 1{,}000 = 666 \text{ lbs. of } 3.5\% \text{ milk.}$$

It would seem to the writer as if each seller should be allowed to make his own standard, so long as it is above the legal requirement for the province, and be required to advertise the same, prosecution to follow failure to come up to the advertised standard; or, the principle should be adopted of regarding all clean milk as pure and unadulterated which is sold as it comes from the cow—nothing added to, and nothing taken from the milk, except heat.

The International Dairy Congress held at Stockholm, Sweden, in 1911 is reported as having made the following pronouncements:—

> "Whole milk is the well-mixed, unadulterated milk obtained from one or more healthy cows by a careful and exhaustive milking. The fixing of a certain minimum percentage of butter-fat in milk offered for sale is unreasonable and purposeless."

Safest Milk for Direct Consumption

In spite of regulations, inspectors, and much machinery of various kinds to insure good milk for city dwellers, it is to be regretted that considerable milk sold in towns and cities is more or less dangerous to health, especially for children. It is estimated that one-half the infant mortality could be prevented by a better and more sanitary supply of milk for children. In the United States, 316,000 children under five years of age die annually. Of these it is claimed that one-half, or 158,000, could be saved. In Canada, 36,000 children under one year of age die annually.

For a long time there was a considerable prejudice against pasteurized milk for infant feeding, but recent tests have shown that pasteurized milk is more easily digested than raw milk—there is less tendency for it to form in balls in the stomach.

Taking everything into consideration, the safest kind of milk is pasteurized milk, but the pasteurizing process must be properly carried out, and not be done in a slipshod manner.

The following is a copy of section 12, the Ontario Milk Act:—

> "It shall not be lawful to apply the word 'pasteurized' to any milk unless all portions have been subjected for at least twenty and not more than thirty minutes to a temperature of not less than 140 and not more than 150 degrees Fahrenheit and then cooled at once to 45 degrees Fahrenheit or under and kept at that temperature until delivered to the consumer, and the process of pasteurization shall be subject to inspection by the local Medical Health Officer or such inspector as he may designate; provided always that all such milk shall in all other respects be subject to all the terms and conditions of this Act."

Certified Milk

By many, what is known as "certified" milk is considered to be the safest and highest grade of milk. This class of milk retails at 15 to 20 cents a quart. The legal requirements for this grade of milk in Ontario are, according to Section 11 of the Ontario Milk Act:

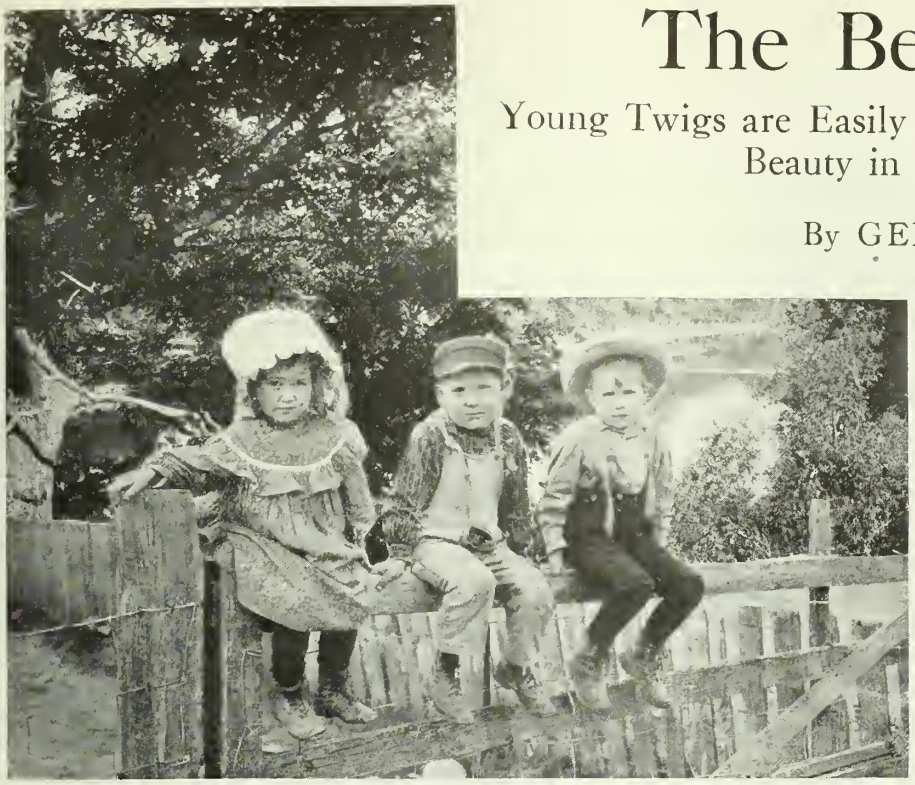
> "It shall be unlawful to apply the term 'certified' to any milk which does not comply with the following standard:—
>
> (a) It shall be taken from cows semi-annually subjected to the tuberculin test and found without reaction;
>
> (b) It shall contain not more than 100,000 bacteria per cubic centimetre from June to September, both inclusive, and not more than 5,000 bacteria per cubic centimetre from October to May, both inclusive;
>
> (c) It shall be free from blood, pus, or disease-producing organisms;
>
> (d) It shall be free from disagreeable odor or taste;

(Continued on page 68.)

The Bent Twig

Young Twigs are Easily Bent, But Whoever saw any Beauty in a Bent Twig?

By GENEVIEVE



They have a serious outlook on life and like to be taken seriously.

YOUNG TWIGS are easily bent, but whoever saw any beauty in a bent twig? It is the little shoot planted in an environment of good soil, clean water and warm sunlight, and allowed to take whatever winds blow, that stands upright, a straight, strong tree. It is not bent, only supported, and so prevented from being deformed by weakness. The child who grows up in a sweet, pure atmosphere, meeting life in its reality, its simplicity and its nakedness, has a thousand chances to one over the bent twig whose personality is crushed out to gratify the ambitions or desires of older people.

The supper bell rings and from the back fields a father, tired and toil-stained turns his team toward home. He puts down his water pail, stoops to kiss his wife, also tired, maybe toil-stained, too, and he says, "It's good to be home." And she answers, just as simple: "I'm glad to have you home." The children brought up in that atmosphere are getting a far better start than the little exotic who must become nauseated by over-doses of moral advice without the savory staple of seeing it lived out.

To a child, life is a serious affair—far more serious than it will be after he begins to discover the shams being practised all around him—and he likes to be taken seriously; but grown people don't generally understand this so he is always making mistakes. For instance (and this is true) at school a teacher was attempting to unravel the profundities of a poem beginning, "Prayer is the burden of a sigh." It was in the authorized reader, and the teacher was young and conscientious, so she made a point of being thorough. Among other questions in the development of the lesson she asked, "What is a sigh?" No one seemed to know; it was something apart from their experience. Then Jimmy raised his hand. It wasn't an inspiration; his ideas came slowly, but they were well reasoned out. He had heard people sigh.

"Well?" the teacher encouraged.

"Wind on your stummick," came back soberly.

It isn't very difficult to see the connection, but many a child has been punished for less. His sincerity and his view-point are not recognized, and in the attempt to make them correspond with the idea of the adult, they are bent until they are deformed.

A Lesson from Colt Training

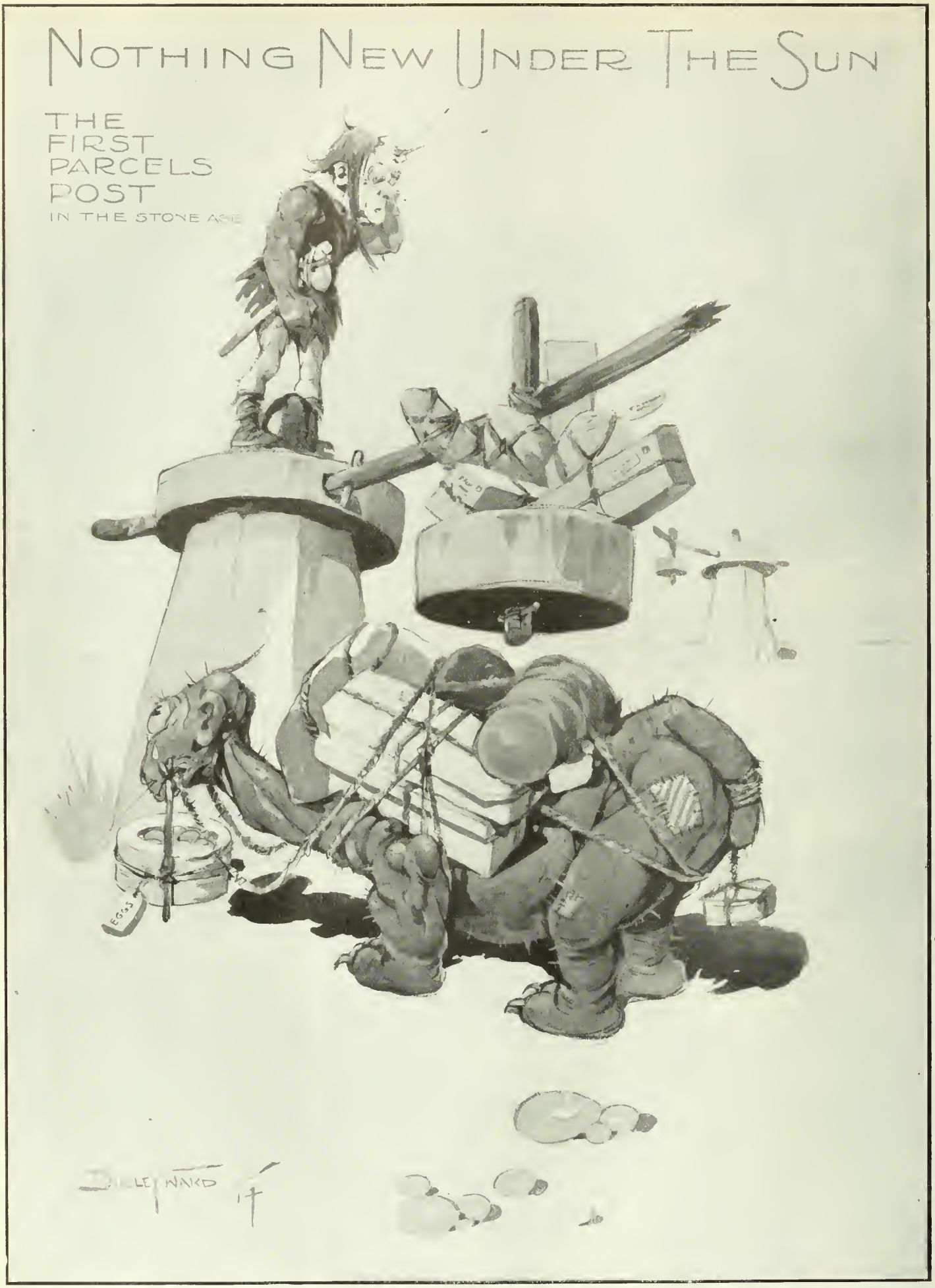
And the worst of it is that there is often so little intelligence brought into the process. A man uses a good deal of judgment in the training of a colt. If it shies at an automobile he will spend hours in trying to teach it that there is nothing about the machine to be afraid of. He takes into consideration its inexperience, its nervousness and sensitiveness, and tempers his firmness with a far-seeing kindness. When a child is afraid, an attempt is frequently made to stamp out the instinct by ridicule or force. If it is a case of danger which the child should really dread the treatment is the same. A mother finds that Johnny wants to touch the fire, she tells him that he "must not," discovers him making his way to it again, explains to visitors that she "just has to watch him," and finally administers the time-honored cure-all, a whipping. That takes his attention for a while, but as soon as he discovers that she isn't there to watch him, he seizes his opportunity, and possibly gets badly burned. Of course, he never wants to touch the fire again, but a mother can often save a child a great deal by letting him touch the fire while she is there, and the rule works from the cradle right up. The young man or woman who has been shielded from every wind is rather a wobbly individual when left to stand alone.

But what about the toughening process of the rod in which the disciples of Solomon put their faith? Believe as much as you like in the proverb about "old maids' bairns," but just try to remember how you felt about it yourself if you have ever had the experience. Ellen Key, one of the clearest-sighted and most sympathetic humanists of the century says: "If statistics were prepared of ruined sons, those who had been flogged would certainly be more numerous than those who had been pampered." Of course, if you happen to be possessed of a bad temper you have to "take it out on something." A youngster knows this. In a family where these attacks occur you will hear a little girl say to her dolls, "Now mother's nervous today, and if you don't keep quiet I'll give you a whipping that you'll remember." Her brother would put it, "I can't find that wrench and I'm not in very good humor. I'd as soon tan your jacket as look at you this morning." The little twigs begin early to show the direction of their bending.

Many a Nervous Little Liar needs Food and Open Air

This brings us up to the question of whether the little folks may not have nerves and humors, too. They have more delicate, highly-strung organisms because besides performing their ordinary functions the organs have the additional strain of building a growing body, so there is no doubt that half the sins of childhood are due to physical disorders. How many times has Johnny been allowed to lie awake night after night with toothache because, "it's only a first tooth and not worth filling; it will soon loosen and come out itself?" If he is tired out and falls asleep at the end of a corn-row the next day he is called lazy. If he is irritable and "talks back," he is saucy. Or perhaps when he starts to school he gets along all right for a while, then gradually becomes "stupid." The parents have come from clever families and are keenly disappointed. Finally it is discovered (we hope) either by accident or in the newly-established school inspection, that he has catarrh or adenoids, and when these troubles are remedied by an operation which is very

(Continued on page 42.)



The above is the first of a series of comic business cartoons which Dudley Ward has prepared for Farmer's Magazine. There is humor galore in all of Mr. Ward's characterizations, and he is at his best in this series. To apply phases of present-day business life to conditions existing in the Stone Age gives ample scope for the exercise of a whimsical imagination and a facile pen; and Mr. Ward, in his inimitable drawings, gets the most out of his subjects. The next sk tch will be "Joy Riding in the Stone Age."

Perfect Sewerage for Rural Homes

Showing the Simplicity of a Septic Sewage Disposal Plant that Cesspools should be a thing of the Past

By M. J. QUINN

The farmer who appreciates the value of comfort and sanitation about his home will be glad to know that it is not only the resident within city limits who can enjoy the convenience of a fully equipped bath-room in the house. While a farmer here and there has put in a septic tank and running water system, the majority still seem to entertain some doubt as to the safety and efficiency of the arrangement. To these this article will be more than interesting, as it explains the principles involved and goes fully into the methods of installation. The greater part of the work can be done by the farmer and his hired man, so the expense will come below the general expectation.

It is perhaps no exaggeration to say that, having regard to the frequency with which it comes up for consideration, and many other circumstances, the question of properly disposing of sewage is one of the most important matters with which the health authorities throughout the country have to deal, and yet it is a remarkable fact that in these days of popular education, when the people enjoy the benefit of free literature and lectures on fruit-growing, dairying, domestic science, etc., that a knowledge of so important a subject, and one so closely allied to their physical and moral welfare is confined to a limited number.

True a vast amount of experimenting has been done during recent years, and the matter has received a great deal of attention from scientific men, the results of whose labors have been freely discussed at medical conventions and reported in medical journals, but the valuable information so obtained has not reached the great mass of the people at all.

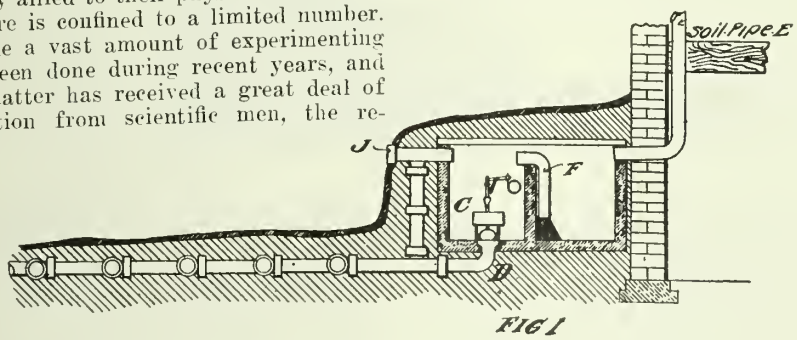


FIG I

In the matter of public sanitation, the question of disposing of sewage in small towns and villages as well as in less populated districts, where by reason of its great cost a general system of sewerage is impossible, is daily becoming of greater importance, and as the title of my paper would indicate, that is the phase of the question with which I propose to deal. The system to which I intend to refer is known as the septic tank system, and I believe that nearly all who have studied it are agreed that it is at once the most natural, most scientific, simple and economical system in use today, and speaking from a personal knowledge of scores of these systems, I am in a position to say that it is worthy of all the good things that are said of it.

I realize, that, apart from a description from a mechanical standpoint, anything I might say to medical men regarding the system would be superflous, but for the benefit of the layman who may be in need of information on the subject, and in order to emphasize the necessity of carrying out every detail, in constructing a system as hereafter described, I deem it wise to briefly refer to the fundamental principles which govern it.

Types of Bacteria and their Action upon Sewage

It is a matter of common knowledge that living earth—or top soil,—is a powerful purifying agent, but comparatively few are aware that the presence in it of countless numbers of bacteria, or microbes, is alone responsible for the chemical changes brought about in waste matter placed beneath its surface, and that these bacteria, not only through their action remove and destroy the dangerous properties of such waste matter, but actually convert them into plant food, which, being taken up by the vegetation is again consumed for the sustenance of life.

Pasteur divided these microbes into two classes, viz.: — Anerobes, or those which lived apart from air, or derive their oxygen from decaying compounds, and aerobes, or those which require plenty of fresh air for their development, and as both classes are considered necessary for the complete reduction of waste matter, it will be seen that if sewage is placed too deep in the earth, as for instance in a cesspool, where, owing to the absence of air, the necessary aerobic bacteria cannot exist, it may pass down deeper in a putrid state, and, finding its way to the water supply, not unfrequently results in an outbreak of typhoid fever or some other intestinal disease.

The two classes of microbes referred to have properties somewhat differing from each other, but the net results of their work under proper conditions is the breaking down of the solids in the sewage, the disintegrating of its constituents and the conversion of the whole into liquid and gases, in which form it leaves the septic tank, the former to be distributed under the surface of the earth, where by reason of its contact with free oxygen, bacterial life is most active, there to be still further reduced and finally converted into nitrates, which are readily taken up by the vegetation on the surface, and the latter passing up high into the air, as hereafter described.

With this brief reference then, to the principles which underlie what is conceded to be a most efficient system for the disposal of sewage, I propose to indicate how it should be constructed; and in order that I may the more readily

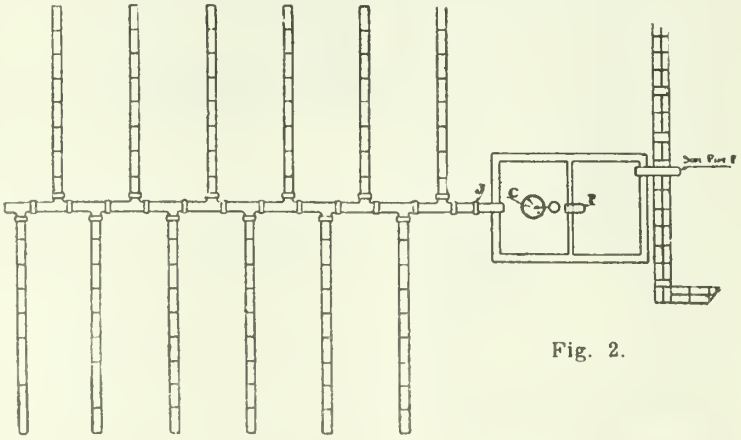
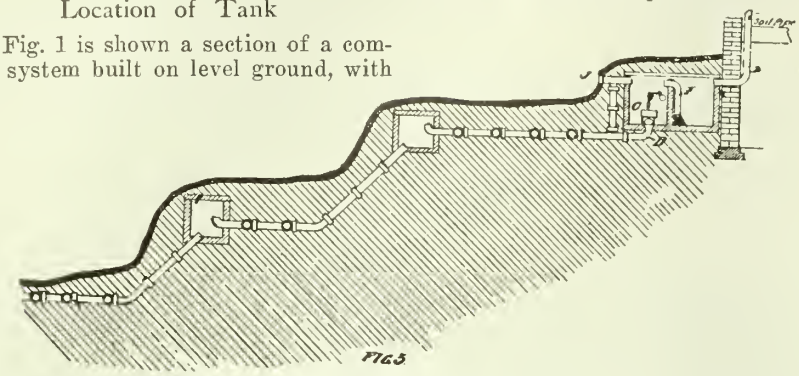


Fig. 2.

make myself plain, I present for your inspection a number of diagrams which I trust will accomplish the desired result.

Location of Tank

In Fig. 1 is shown a section of a complete system built on level ground, with the tank placed close to the wall of the building—where in fact the large majority of those now in use are located.



Material of which the Tank should be Built

The tank should be built of brick or stone, laid in and lined with cement, or of solid concrete, the main object being to have it impervious to moisture.

Screen on Overflow

It will be noticed that the tank is divided into two compartments, an over-flow pipe "F" being built into the dividing wall, the mouth of the said over-flow being within seven or eight inches of the bottom of the tank, and being covered with a wire screen about the size of an ordinary pail, the mesh of which screen not exceeding three-quarters of an inch.

Soil Pipe Acts as Ventilation

The main soil pipe is represented by "E" and should be directly connected with the closet, bath, sink, etc. It extends from the same compartment in which the over-flow is placed to a point two or three feet above the roof, acting not only as a conductor of sewage to the tank, but also as a channel by which any gases in excess of those in solution may pass out to the atmosphere at a height which renders it impossible for them to inconvenience the occupants of the building.

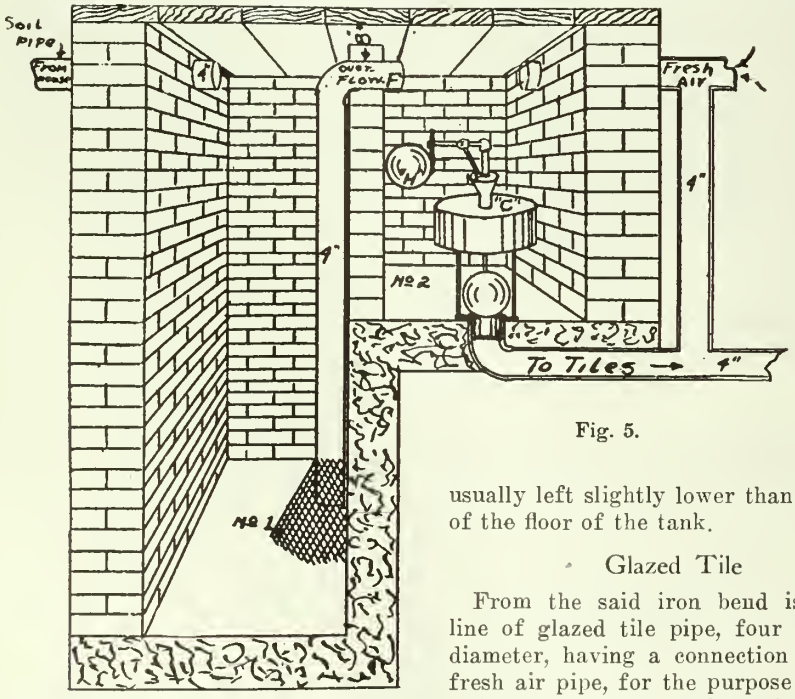


Fig. 5.

Fresh Air Inlet

"J" in the second compartment admits fresh air, which passes freely over the centre partition—spaces being left in the top of the latter for the purpose—and up through the soil pipe to the roof.

Automatic Discharge

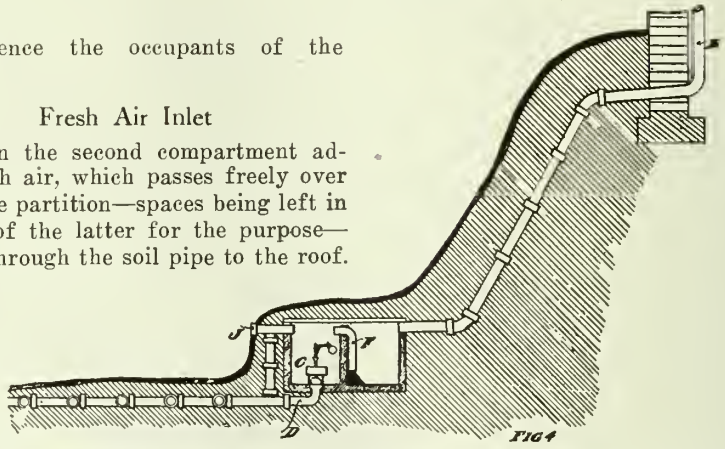
In the centre of the second compartment is placed an automatic valve "C," which is caulked into a four-inch cast iron bend, as ordinarily used by plumbers, and which is securely built into the bottom of the tank during its construction. The top of the hub of the bend is usually left slightly lower than the level of the floor of the tank.

Glazed Tile

From the said iron bend is run a line of glazed tile pipe, four inches in diameter, having a connection with the fresh air pipe, for the purpose of ventilation, and a number of openings placed at intervals of two feet or more from which are run branches of four-inch field tile with loosely butted joints.

Fig. 2 shows a plan of the whole system and illustrates one way in which the tile may be laid, though as will be manifest, they would do equally well if all laid on one side of the main carrier in any number of branches, of any length, providing a sufficient number in the aggregate are laid, and the rows are not placed closer together than two feet in light soil, and a somewhat greater distance in heavy soil.

The field tile should not be placed more than one foot below the surface, and must be perfectly level, for the reason that if given a fall the earth surrounding the low ends of the system would receive more than its share of liquid sewage, and might in time become foul, while if level the earth surrounding every tile has an equal amount of work to do, and will produce most satisfactory results.



Briefly then, the operation of the system is as follows:—

The sewage from the building enters through soil pipe "E," filling the first compartment in which all solid matter is retained until it is reduced by the contained bacteria which multiply and develop very rapidly. In a liquid form it is allowed to enter the second compartment through over-flow "F" which is turned down because of the presence of the bulk of the organic matter in suspension on or near the surface.

How Tank Discharges

When the liquid has risen in the second compartment to the height at which the unlocking float on the valve has been set, the valve automatically opens, and discharges the contents of that compartment, be it fifty or a thousand gallons, into the system of field tiles, through which it percolates into the surrounding earth, to be taken care of by nature as already described.

The valve is made to discharge liquid sewage at a maximum depth of 24 inches, and a minimum depth of 17 inches, and the top or unlocking float may be set at any point between these two levels.

Depth of Sewage

As the tank takes from twelve to twenty-four hours to fill, it will be obvious that there will be abundance of time in which the water in the tiles may soak away before it again discharges.

(Continued on page 40.)

Spanish Gold

The Story of a Search for Treasure on the Coast of Ireland, and the Amusing Situations which Arose

By GEORGE A. BIRMINGHAM

Synopsis of Previous Chapters

The Rev. J. J. Meldon, curate, of Ballymoy, a village on the west coast of Ireland, while visiting his friend, Major Kent, comes across an old pocket-book of the Major's grandfather, in which he finds an account of some treasure, supposed to have been hidden by the Spaniards of one of the vessels of the Spanish Armada, on the Island of Inishgowlan. The Major possesses an excellent yacht, The Spindthrift, and they decide to take a trip to the island to search for the treasure, which Meldon is very confident of finding, but of the existence of which the Major is very skeptical. Meldon also owns a yacht, The Aureole, a worthless tub, which he lets to a Mr. Langton, who, with a friend, wishes to take a trip round the coast. On arriving at the island Meldon and the Major find Higginbotham, an old college chum of Meldon's, engaged in surveying the island for the Government, and dividing it up into allotments. He informs them he is prevented from completing his work by the obstinacy of one old man, named Thomas O'Flaherty Pat, who owns a piece of land in the very centre of the island, entirely surrounded by other people's land, but with which he will not part at any price. Meldon, not wishing to divulge the real reason of his visit, tells Higginbotham the Major is a Government mineralogical expert who has been sent to examine and report on the island's mineral resources. Meldon and the Major start to explore the island and discover they are being followed everywhere by an old man, who turns out to be Thomas O'Flaherty Pat, and who declares he cannot understand a word of English. Meldon tells him they are naturalists looking for sea beetles, and manages to get rid of him; continuing their search, they find an inlet with a hole, which is only visible at low tide, and here Meldon decides the hidden treasure must lie. On returning to the yacht they notice the arrival in the harbor of the Aureole. The following day Meldon starts for the inlet and the cave, and on his arrival discovers a man, who is being lowered over the cliff to the entrance of the cave. This turns out to be a Sir Giles Buckley, the friend who is with Langton, on the Aureole, and son of a neighbor of the Major's, who had lately died. Sir Giles would also have heard of the treasure, as his grandfather was a friend of the Major's grandfather, and had visited the island with him. After some discussion, Sir Giles calls out to Langton to haul him up, and both he and Meldon depart, as the tide has nearly covered the hole in the rocks. Meldon and the Major return to the yacht and find Higginbotham coming out to meet them. Meldon had that morning sent Higginbotham to Thomas O'Flaherty Pat on the protence that the latter was willing to sell his plot of land. Higginbotham complains that there must have been some misunderstanding.

CHAPTER IX.—Continued.

"Now, that's all nonsense," said Meldon, "and you know it. Mary Kate speaks both languages fluently. I'm here acting for the National Board of Education, as I told you before, and I've made it my business to find out what Mary Kate knows and what she doesn't. You can't have taken the child the right way. I expect you've been trying to come the Government official over her, and it won't do. No child would stand it, especially a high-spirited little creature like Mary Kate. You ought to cultivate a more ingratiating manner. You mean well, I know; but good intentions aren't everything."

"The fact is——" said Higginbotham.

"Look here. I had a long talk this morning with Sir Giles Buckley. You know Sir Giles?"

"No, I don't. Who is he?"

"He's something in the Castle. I forget this moment what his particular tack is, but I know he's an important man. Major, do you recollect what Sir Giles is? Does he run the Crimes' Act, or is he the man who bosses the Royal Commissions?"

"I don't know. I never——"

"Oh, well, never mind. I think he specializes, so to speak, in Royal Commissions; but it doesn't really matter much. If you read the newspapers you'll be familiar with his name. He happens to be going round Ireland at present with Langton, his private secretary——"

"Not Euseby Langton?" said Higginbotham.

"Euseby Langton! I don't know. I didn't ask his Christian name. By the way, who is Euseby Langton? I seem to recognize the name, but somehow I can't quite fix the man."

"I don't think you knew him; but I did very well. He was in the library in College in our time—some sort of an assistant there. He got sacked. They always said it was drink, but I don't know. He went abroad somewhere afterwards."

"I remember," said Meldon, "but this is a different man—couldn't possibly be the same, you know."

"Well," said Higginbotham, for Meldon had relapsed into silence, "go on."

"Go on with what?"

"With what you were telling me about Sir Giles Buckley."

"Oh! Ah! yes, Sir Giles, of course. Well, I put in a good word for you. I explained that you were doing the best you could with Thomas O'Flaherty Pat. He seemed rather anxious about that business. I said I expected it would pan out right enough in the end if he gave you a free hand. He evidently had some notion of stepping in to settle it himself. Now, what I want to know is this: Would you like him to try his hand at it, or would you rather he left you alone to work it in your own way?"

"Of course if Sir Giles—it would be very kind of him——"

"Very well. I'll arrange that. You leave it to me, Higginbotham. And for goodness' sake don't go talking to Sir Giles about it yourself. You've no tact. You know you haven't. You'd just put your foot into it again the way you did with Mary Kate."

"I won't go near him till you tell me."

"That's right. Stick to that. I'll see him as soon as I can and I'll let you know. Goodbye for the present, old chap."

"Thanks, awfully, Meldon. I'm really more obliged to you than I can say. If ever I can do you a good turn of any sort——"

"Don't mention it. I'm only delighted to do what I can to help you. Goodbye."

After dinner Major Kent and Meldon sat on the deck of the Spindrift and smoked. On the deck of the Aureole sat Sir Giles Buckley and Langton, who also smoked. Neither party made any attempt to go on shore. The Major tried two or three times to start a conversation and was severely snubbed. Meldon declared that he wanted time to think things over quietly. The situation was obviously a difficult one, and frivolous talk on such subjects as a slight fall of the barometer or the possibility of getting some fresh milk was quite out of place. After finishing his pipe, the Major dropped off to sleep in an uncomfortable position. At about half-past five Meldon woke him up.

"I think I've fixed that fellow Langton," he said.

The Major yawned.

"Have you?" he said. "What have you done to him?"

"I haven't done anything to him yet. What I mean is that I've discovered

where he comes in, how he happened to be in a position to give Sir Giles the tip about the hole under the cliff. You heard what Higginbotham said about Euseby Langton. Well, I recollect that this fellow signed the agreement I drew up about the Aureole 'E. Langton.' He's evidently Higginbotham's man."

"He might not be," said the Major. "'E. Langton' might stand for Edward Langton or Edgar Langton or Ethelbert Langton."

"It might stand for Ebenezer Ledbeater, but I'm pretty sure it doesn't. It stands for Euseby Langton. Euseby Langton got the sack for drink, and this fellow looks as if he drank a lot, which also goes to show that he's the same man.

"Well, suppose he is?"

"The next point is where did Euseby Langton get sacked from?"

"I forget. I wasn't listening to Higginbotham."

"Well, luckily enough I was. Euseby Langton got sacked from Trinity College Library. He had some sort of job there poking about among catalogues and things. Now you may not be aware, Major, of the fact that Trinity College Library is the biggest in the world. There are books in it that no man has ever read. Nobody could. I couldn't myself, even if I gave my whole time to nothing else. What's to hinder our friend Langton from picking up the tip about the place where the treasure is from some book in the library?"

"There's no such book."

"I wouldn't be too sure of that. There are some extraordinary books in that library—books that aren't in the college course anywhere—that even the men who go in for honors know nothing about. Besides, it mightn't be a book exactly. It might be a manuscript—not a large illuminated missal of a thing stuck in a glass case for every fool to stare at, but some quiet, unobtrusive, rather tattered manuscript which had lain for years, perhaps centuries, under a pile of other manuscripts. That's the sort of place the information would be."

"I don't see how it could."

"It might, in fact, be the log of the Spanish captain himself. You know there's an organ in the big examination hall that was taken out of a Spanish Armada ship. Well, if they fetched a thing like an organ all the way to the college, you may be pretty sure that they fetched lots of manuscripts too. Once Euseby Langton got a taste for hunting up old manuscripts, he'd be just as likely as not to hit upon the log of our captain."

"But you said he drank. Is it likely he had a taste for manuscripts?"

"He's almost sure to have had. Most probably it was the manuscripts that drove him to drink. They would, you know, unless he was exceptionally strong-minded, and Langton clearly wasn't that. Now suppose——"

"You can suppose any rigmarole you like."

"I explained to you before, Major, the nature of a scientific supposition or hypothesis. It always strikes the outsider at first as a rigmarole. I needn't go into that again. What we have to deal with is fact—hard fact—and to get some sort of reasonable explanation of things as they are. It's quite evident that Sir Giles and Langton know that the treasure is in the hole under that cliff. It's also evident that Langton gave Sir Giles the tip. It follows that Langton must have found the thing out somewhere. I don't say for certain that he found it in a manuscript in the college library. I only say that, considering all the circumstances of the case, he's more likely to have found it there than anywhere else. That may not strike you as a very good hypothesis; but unless you have a better one to propose, it seems to me quite good enough to go on with."

"All right, go on with it. But I don't see where you expect to arrive."

"I'll arrive, if you want to know, at a nice comfortable income and a good, well-furnished house, a place I can take my little girl to with some sort of satisfaction. That's where I'll arrive and I'm putting the treasure at the lowest possible figure."

CHAPTER X.

Meldon was very little troubled by the problems and perplexities which pressed on him. He turned into his bunk at nine o'clock and slept the unbroken sleep of a just man until six the next morning. Then he got up and plunged overboard for his morning dip. He swam in the direction of the Aureole and was rewarded by seeing Langton come on deck in his pyjamas. A few minutes later Sir Giles emerged, and the two stood in consultation watching the Spindrift. Meldon, having had as much of the water as he cared for, climbed on board and waved a greeting to the Aureole with his towel. He noticed while he dressed that Sir Giles and Langton did not go below together. Either one or the other of them remained on deck to watch the Spindrift. Meldon roused the Major and then got breakfast ready. The meal, in spite of the Major's opposition, was eaten on deck.

"It's quite evident to me," said Meldon, "that those fellows mean to watch us. They're pretty certain that we're after the treasure, and they don't intend to let us get round to the hole in the cliff without them."

Major Kent snorted contemptuously. He, too, had slept well and had wakened in one of those moods of sound common sense which are strongest in men of Anglo-Saxon temperament during the early part of the day. The idea of treasure-seeking seemed to him more than ever absurd as he sat in the morning sunshine eating fried bacon and drinking tea. That two strangers in an ordinary and somewhat battered yacht like the Aureole should be spying upon his actions, as if he and they were conspirators, was a grotesquely impossible thought. Such things might have happened in the sixteenth century, or might happen even now in places like Russia. They couldn't be real during the twentieth century anywhere in the dominions of His Britannic Majesty.

"I must make arrangements for dealing with them," said Meldon.

"J. J.," said the Major, with another snort of contempt, "I've had enough of this play-acting. You and I aren't children that we should spend our time pretending we are brigands and hunting other fellows about in smugglers' caves. I'll have no more of it."

"Do you mean to tell me that you don't believe those two fellows are watching us, afraid of their lives that we should succeed in dodging them and getting the treasure?"

"Of course I don't believe anything of the sort. It's absurd on the face of it. I don't deny that it was odd their turning up yesterday at the very place you fancied there was treasure hidden; but as for their being after it or watching us, I simply don't and won't and can't believe a word of it."

"Very well. I'll have to prove it to you."

"You'd prove anything," said the Major—"any blessed thing, once you start talking, but you won't convince me. I've heard too many of your proofs."

"I'll prove it this time by the evidence of your own eyes and ears. You say that Sir Giles and Langton aren't watching us and don't mean to track us if we go after the treasure. Very well, I'll demonstrate to you that they are and do."

He stood up and hauled the punt alongside.

"Get in," he said to the Major.

"Why should I get in? I don't want to go ashore?"

"You'll get in because I tell you and because once for all you're going to be shaken out of that vile attitude of sceptical superiority which you've chosen to assume."

Major Kent shrugged his shoulders and submitted. Meldon stepped into the punt after him and began paddling towards the pier.

There was a stir on board the Aureole. Langton was on watch when Meldon shoved off from the Spindrift. He went below at once. Then he and Sir Giles came on deck together and pulled their punt alongside. Meldon, who could watch the Aureole as he rowed, judged from the look on his face that Sir Giles Buckley was in a bad temper.

"I'd be prepared to bet now," he said, "that Sir Giles is swearing like anything this minute. I expect he hadn't finished his breakfast and hates being routed out at this hour to follow us. Don't you look round, Major. If you do it's ten to one you upset this patent punt, and I shouldn't care to rely on Sir Giles to pick you up in his present mood."

Having reached the pier, Meldon, followed unwillingly by Major Kent, set out briskly towards the south end of the island.

"Where are we going now?" asked the Major.

"We're going to convince you. If you don't like it, you can lay the blame on your own sceptical nature. Look round

(Continued on page 59.)

Starting a Mushroom Bed

At a Dollar a Pound, the Culture of this Delicacy makes a Profitable Hobby

By JEAN MacKENZIE

IT is really a wonder that the mushroom is not more extensively grown than it is, since it is so popular, and very easily grown. Even those who have not room to go into mushroom raising on a large scale for market, can easily grow a sufficient supply for home consumption, in small boxes in the cellar. Any person, whether in the country or a city dweller, owning a cellar the temperature of which does not fall below 45 or 50 degrees Fah. in the coldest winter weather, can have a supply of fresh mushrooms all the year round. Apart from the desirability of having a supply of mushrooms for home use, they are a very profitable crop to send to market, particularly during the winter months. Here in Western Canada they retail at $1 per pound, so any one with a liking for this sort of work, could not do better than make preparation for starting a bed this spring. Mushrooms can be grown out of doors during the summer months, or under open sheds, but must be used soon after gathering, as they become infected with maggots in a day or two, and cannot be shipped to distant markets. The preparation of the beds is the same for indoor and outdoor culture.

The conditions essential to successful mushroom growing are easily procured. The first essential is to procure a place for the beds, protected from excessive moisture, and where fresh air will circulate freely about them. The second requisite is an ample supply of fresh horse-droppings, and the third a supply of reliable spawn for starting the beds. A very good way to arrange the boxes in the cellar so as to economize space, is to have one stand on the ground, and others in tiers above.

The first step in preparing the beds is to stack the fresh horse manure (no other manure will give the right heat) in a square heap, three feet or more in height, to ferment, packing it solidly together, and rejecting any that has become burnt. Keep it under cover of some kind to prevent soaking by rain. At intervals of from six to ten days, according as heat increases more or less rapidly, the heap must be turned over, building it afresh and packing it together to keep the inner portion from burning, and turning the outer portion into the centre of the heap. At the third turning, one-third of the bulk of the manure may be added in light loamy soil, and the whole mixed thoroughly together.

When the first strong heat of the manure has dissolved the fresh straw and the heap crumbles easily in turning, no longer giving off a pungent smell of ammonia, it is ready for making the

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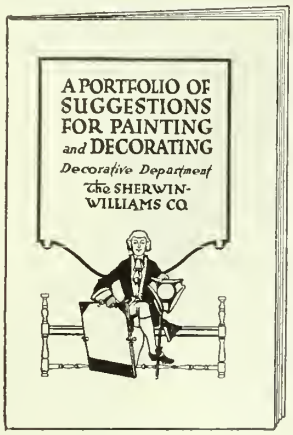

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beds. This should be in from two to three weeks from first stacking. Be careful not to leave it too long, or the manure will lose much of its heating qualities. Make the beds in boxes on the cellar floor, by setting up boards to form pathways, or on tiers of shelving around the walls. The prepared manure should be packed into these beds, ten or twelve inches in depth, and pressed down firmly. Place a thermometer in the bed, with the bulb well buried, so that you can tell the temperature of the beds readily from day to day.

If the manure is in the right condition, the temperature will rise rapidly going as high as 100° and sometimes higher, and then declining again. Should the temperature reach 125°, the beds must be cooled off. Do this by making holes in them, a foot or two apart, and opening all the ventilators. Refill these holes and pack solidly again as soon as the heat lowers to 100°. When the heat has fallen to between 80° and 90°, is the proper time to spawn the beds. Cut the brick of spawn in pieces 2 inches x 3 inches, and make holes in the surface of the beds ten or twelve inches apart each way, and about two inches deep. Place a piece of spawn in each hole, smooth over the top to fill up the holes, and pack down evenly. A brick or a flat wooden mallet, is a good tool for making the beds firm and solid.

Eight or ten days after spawning, a casing of earth, one inch in depth, should be placed over the beds. Light, loamy soil, such as well-rotted sod, is the best to use for this purpose. Spread it evenly over the bed, and pack down lightly. Do not water the bed until the spawn has run through it, which usually takes from four to six weeks. When the spawn has run well through the bed, water well with tepid water, and keep the surface moist but not wet, until the mushrooms appear. They should appear in from five to eight weeks, though they will be slower if the heat of the manure is well spent, or the temperature of the cellar is cool.

Perfect Sewerage for Rural Homes

(Continued from page 36.)

To prevent the gases of decomposition escaping through other than the proper channel the tank must be covered first with rough plank, and then with five or six inches of earth, which in turn, if desired, may be sodded over.

Capacity of Tank

In figuring out the size of tank necessary, the following may be taken as a safe rule, viz.:—for every occupant of a private house or hotel, allow three cubic feet of space in each compartment, while for a school or factory, where, as in the case of a house, nothing but domestic sewage is to be treated, one-third less space will be sufficient, and for every cubic foot in one compartment (or one-half the tank) lay thirteen feet of four-inch field tile.

It will be obvious that, as in the case of ordinary stable manure, human excreta, if deposited in its solid state just below the surface of the earth, would entirely disappear in a very short time, and the system just described is merely a most convenient and sanitary way of automatically accomplishing that very desirable result, with the accompanying advantage of not only depositing it in the earth partially treated, but in a much more favorable condition to receive final treatment than could possibly obtain if the former method were adopted.

Where the System Must be Placed

Anticipating the difficulty which will be encountered where there is a considerable fall in the ground surrounding the building to be drained, I would refer you to Fig. 3 which shows a number of terraces each receiving a portion of the effluent from the tank.

It will be noticed that the end of the glazed tile is turned up a few inches on the brow of each terrace, the result of such arrangement being that all the field tiles at each level will fill before the sewage can rise and over-flow to the tiles on the next lower level, where the same operation takes place, and so on for any number of terraces, and as will be apparent the sewage passing into the tiles on a high level cannot possibly escape to those lower down so that the earth surrounding every tile will have its full complement of work to perform.

Where Tile System must be Located Considerably Lower than the Building Served

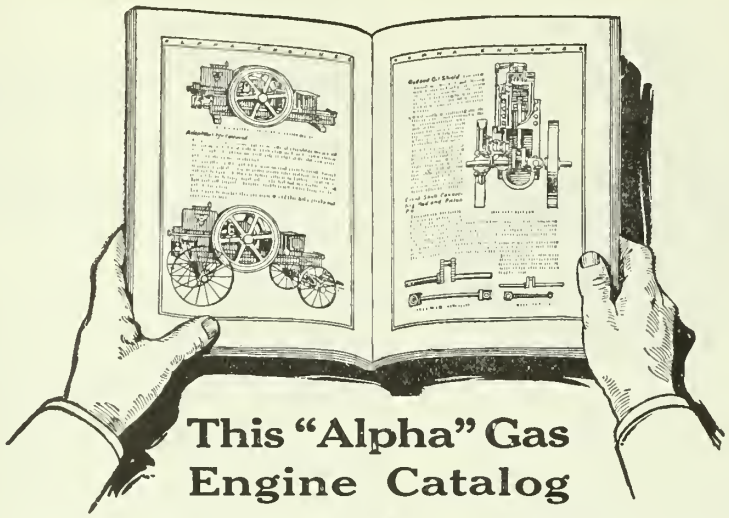
Fig. 4, the horizontal scale of which is somewhat exaggerated, shows the proper relative position of the tank to the house where the field tiles have to be placed on a level considerably below that on which the building stands. In such a case it will be evident that were the tank placed in the high level, the discharge would come down with sufficient velocity to wash out both earth and tiles, while the discharge from the house to the tank as shown will not have any injurious effect on the latter.

It sometimes happens, where large tanks are required, as for instance, in schools, factories, etc., that ground room is limited and it would prove difficult to install a tank of the proper cubical contents and a maximum depth of not more than three feet.

In such a case it is permissible to build compartment No. 1 as deep as five or six feet giving it the same cubical area as No. 2, which, however, in no case should exceed three feet in depth. Such an arrangement is shown in Fig. 5, which also shows that the over-flow pipe is carried to a point as near the floor as it would be if the tank were shallower.

Improved Type of Overflow Screen

The arrangement of the over-flow screen shown in Fig. 6 has proven to be a very satisfactory one. As will be plain, it is merely three pieces of board which, with the cement partition make a box about ten or eleven inches each way



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inside. It is closely perforated with three-quarter inch holes up to a height of about eighteen inches and is secured in place by a couple of pieces of wood reaching to the opposite side of the tank; it has the advantages of longer life than the wire screen and of being easily removed should occasion at any time require it.

Construction of Tanks where Ground Space is Limited

In answer to a question which arises in the minds of most people who have given consideration to the system, I may say that it will not freeze in winter, even when the frost penetrates the ground for several feet, everywhere except where the tiles are laid, and, as may be expected, splendid results may be obtained in vegetables or flowers if the tiles are laid under a garden.

System Not Affected by Frost

In conclusion I would simply refer to a few of the principal points which which should be kept in mind in constructing such a system, viz:—

Final Suggestions

Have the tank covered with a few inches of earth, to prevent the escape of gases, except through the soil pipe stack. See that the valve discharges at least once before the tank is covered in. See that no trap is placed on the main soil pipe to prevent the free passage of air across the tank and up to the roof, and that the necessary space for the air is left in the top of the centre partition, and, finally, take care that no disinfectants or chemicals of any kind are allowed to enter the tank, if the life of the bacteria, upon which the system depends for its success, is to be preserved.

The Bent Twig

(Continued from page 33.)

simple, or by bringing his general physical condition up to normal, Johnny is a new boy all round.

And again in our zeal to turn out model little moralists we are likely to demand of children a standard that we never even pretended to live up to ourselves. If it is true that many nervous little liars need nourishing food and life in the open air, not punishment, it is also true that if the standard demanded of children were applied to grown people, there would soon be no such thing as a journalist or lawyer, or politician.

We Know this. Why do we Ignore it?

Anyway we lie to children right along and they know it, or at least they soon find it out. It seems to be a parent's privilege to lie if the lying is going to bend the twig the right way, i.e., the way in which the parent himself was bent. We hear many objections to sex-teaching and some of them are well grounded, but before drawing any final conclusions, a parent would do well to study some of the conditions in the local school. Your

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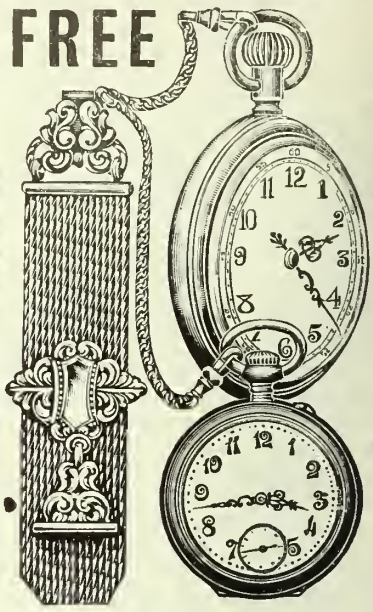

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boy comes downstairs some morning brimming with delight and wonder. He has been told that he has a baby brother. With a singleness of confidence and frankness, he asks the most natural question in the world, "Where did it come from?" and the father answers, "From under a cabbage leaf," or some other old-wives' story. He goes to school and in the joy of his heart spreads the news only to be laughed at until he is hurt and puzzled, and utterly miserable. In the depths of his disgrace and perplexity the mothers'-terror of the school comes to the rescue.

"Whatever makes you so green?" he demands. "Come home down the track with me and I'll tell you sumpin?"

Jimmy has been warned not to go home by the railroad track, but he isn't the first person to fall through curiosity. Besides it is an honor to be taken into this hero's confidence, and Bill has helped him through hard places before. It was Bill who taught him to swim when his father threatened to "skin him alive" if he went near the swimming hole. It was Bill who initiated him into the art of smoking mullein leaves, "so he wouldn't be so sick when it came to trying tobacco." And to Bill it was left to teach him now!

His enthusiasm is all gone when the lesson is over. He hates to go home; he doesn't want to see the baby or any of them. What might have been a wonderful secret, a beautiful truth has been contorted into a false and ugly impression which it may take years to correct. I wonder why we are so blind as to think that by ignoring a child's natural curiosities we can stifle them.

That Awkward Age

Of all people I believe that the growing boy from twelve to sixteen is generally least understood. If he is normal he is awkward and self-conscious, and his reticence is often taken for sullenness. His awkwardness and sensitiveness are not uncommonly made the subject of ridicule, and corrections until he wants nothing more than to get off by himself, or with less critical company. You are never in greater danger of losing your boy than now. Then he is often expected to do a man's work because he is "big enough." Young twigs are easily bent and the results are sure to show themselves in bent backs and shoulders, and possibly in the beginnings of more serious ill-health. Did you ever hear a man say to a boy, "Try to spare the colt. You'd better hitch him back or change horses at noon. Remember he's young and the ground's pretty soft."? Yet the boy follows the horses through the soft ground all day, and finishes up the chores after the men are through. When he goes to sleep again after being called in the morning, isn't it strange that no one stops to think that because he is still growing and working at the same time, he naturally requires more sleep and more food than a man?

Perhaps the point where parents are most anxious to bend their twigs, is reached when it comes to choosing a vocation. If a mother has planned to send a boy into the ministry and when the

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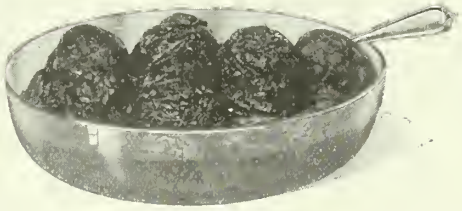

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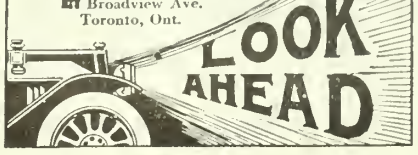

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WE have placed a Travel Department at the disposal of our subscribers to help them to travel without the annoyances that come to the inexperienced traveller. If you are planning a short trip or an extended tour, we will be glad to have you write us stating your intended itinerary; we will supply you with information about Hotels, Resorts, Routes and make helpful suggestions or answer other questions of interest to you. Readers of Farmer's Magazine should avail themselves of this opportunity to travel in security and comfort.

Address your correspondence to the Travel Department

FARMER'S MAGAZINE

143-149 UNIVERSITY AVENUE, TORONTO

crucial moment comes he decides that nothing but the land will do for him, or if a daughter whom she hoped would make a music-teacher suddenly declares her ambition to go into the horrors of a medical school, the disappointment may be crushing. But after all were children made only for the pleasure and pride of their parents? I know that a lifetime is never long enough to repay the sacrifice of motherhood, but when it comes to choosing a life-work, that is a pretty personal affair. Otherwise the result would be about as disastrous as where the parents sacrifice everything for the sake of the children, particularly in saving a fortune for them. So long as it is growing straight, be glad when your twig won't bend.

And although this isn't child-study theory, the writer owns up to inexperience, and recognizes the fact that the real artists of child culture are not the people who have written books or founded clubs, but the man who lives in a pure, warm, clear atmosphere of freedom and confidence with his family, and the woman who through the goodness and joyousness of her character makes the routine of everyday life a festival. Knowing this, any criticisms of these views will be welcome. It is a subject worth discussion, if we will get down to bare truths.

AN OFFISH HEN

From the careful observation and study of an individual barnyard hen, James Dryden, professor in the Oregon Agricultural College, has made the discovery that like "Little Billy in Trilby," some mongrel fowl has an "unmistakable individuality." Hen C543 was hatched April 29th, 1912, and began laying at the age of 5½ months. In twelve months thereafter she had laid 291 eggs. The eggs were white and averaged about 2 ounces. At 30 cents a dozen her eggs for that year were worth $7.27. She ate with a flock of fifty. She was a frequent visitor to the beef scrap hopper and also to the protein for the egg contents and for lime for the shell. She took her daily rest after her feed of mash; and she would go back to the mash a second or third time. She was also a frequent visitor to the water dish; take her off the trap nest after laying an egg, and she goes straight to the water, some of which is later put into the egg. She would nibble at the green food which was always accessible, then walk to the scratching shed and scratch for a stray kernel of wheat or oats. In disposition she was not the most friendly or amiable; she kept her distance; she wouldn't be a pet; she was usually on the outskirts of the flock when you entered the yard. But because this hen was a little offish, and kept herself to the outer circle, the poultry enthusiast should not make the discovery that "offishness" indicates the good layer, and then proceed to kill off all those hens of the inner circle.

Useful New Invention

Enables Anyone to Play Piano or Organ Without Lessons

A Detroit musician has invented a wonderful new system which enables any person or little child to learn to play the piano or organ in one evening. Even though you know absolutely nothing about music or have never touched a piano or organ, you can now learn to play in an hour or two. People who do not know one note from another are able to play their favorite music with this method without any assistance whatever from anyone.

This new system, which is called the Numeral Method, is sold in Canada by the Numeral Method Music Co. of Canada, and as they are desirous of at once making it known in every locality, they are making the following special free trial and half-price offer to our readers.

You are not asked to send any money until you have tried and are satisfied with the new method. The Numeral Company is willing to send it to you on one week's free trial, and you will not have to pay them one cent unless you desire to keep it. There are no express charges to be paid, as everything will be sent by mail. Simply write a letter or post card to the Numeral Method Music Co. of Canada, 225A Curry Hall, Windsor, Ontario, saying "Please send me the Numeral Method on seven days' free trial." If you are satisfied after trying it, the Method and fifty different pieces of sheet music will cost you only $5, although the regular price of these is $10. You should not delay writing, as the Numeral Company will not continue this special half-price offer indefinitely. Later on, the Method and fifty pieces of music will be sold at the regular price.

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Is **CLEAN,** and as **SIMPLE** as "A.B.C." **NO** chance of **MISTAKES** if you use

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The Guaranteed **"ONE DYE** for **All Kinds** of Cloth."

TRY IT and prove it for yourself! Send for Free Color Card, Story Booklet, and Booklet giving results of Dyeing over other colors. The Johnson-Richardson Co., Limited, - Montreal

Growing Tons of Strawberries

New Brunswick Farmers are making Big Returns by Careful Cultivation and Fertilizers

By C. F. FAWCETT

Just as the strawberry is the choicest of small fruits, so the growing of them is one of the best paying occupations of the intensive farmer. The writer of this article is a well-known New Brunswick farmer whose chief hobbies seem to be potatoes, strawberries, and fertilizers.

STRAWBERRIES will thrive on a variety of soils and a large grower shows wisdom in having his plantation, part on light soil and thus early, and the other part of his acreage on a heavier soil. Perhaps the ideal soil for the delicious fruit to develop most successfully in is a rich, friable loam well drained. Even when you have made a decision on the field it is good practice to have hoed crops on it for three years previous to the setting of the plants. The grub of the June bug is very liable to make great destruction among the new-set plants if present in the soil in any numbers, and therefore continued cultivation for the three years has their destruction in view. Again hoed crops help get the land free from weeds, another big pest of the strawberry-grower.

The land is generally prepared for the plants in the fall previous to setting in the spring, by plowing nicely crowned ridges from four to six feet in width. Many of the best growers have these ridges five feet, and just plant one single row of berries down the middle of the ridge.

In early spring this ridge is harrowed and pulverized thoroughly by the quickest and best method which appeals to the farmer, and is then made ready for the new plants by a good top-dressing of chemical fertilizer mixed on the farm to contain four per cent. ammonia, eight per cent. available phos. acid, and ten per cent. potash. This is sowed broadcast on the crown of ridge and then harrowed in.

Setting the Plants

To set the plants a strong line and strawberry trowel are provided the worker, and he sets by hand the new plants in a hole made by the trowel, and a straight line kept by the taut line. A good workman will set as many as four thousand plants in a day. The roots are set fan-shaped and the earth is pressed solid about the plant. This is quite important, especially in a dry time. The trowel mentioned is quite like a proper mason's tool, but shorter and thicker. This is also used later in the weeding in preference to the ordinary

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Quality of cream, as evidenced by De Laval butter always scoring highest in every important contest.

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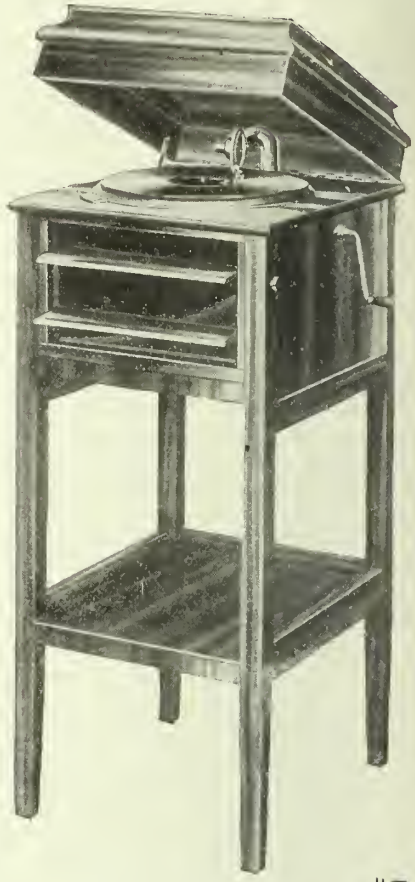
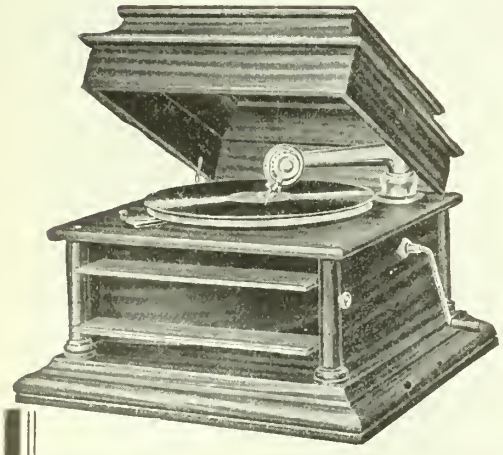
THE CONNECTING LINK BETWEEN FARM AND CITY LIFE

Were entertainment privileges on the farm more numerous, few of the people living in the cities would not prefer the open country life. Theatres and concert halls are impossible in the less thickly populated districts and the great operas and operatic artists never find themselves outside the largest cities. Up to within the last few years the farmer and his family have had to deprive themselves of this class of entertainment. The Columbia Graphophone, however, has transformed former conditions and to-day in thousands of farm homes is making it possible for the farmer and his family to enjoy the same musical treats that were hitherto only possible in the City—vocal selections by the world's greatest singers—instrumental music by artists with an international reputation—and band music by the world's most famous musical organizations. No modern farm home is complete without a Grafonola. Has your farm this great entertainer?



The "Regal"



The "Favorite"

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The Regal—Complete with 12 standard double disc records we sell you this machine on a cash payment of $12 and the balance of $70 on monthly instalments of $8. If you prefer to pay cash you may have this machine for $65 (without records).

The Favorite—is a larger bodied machine but the same price and sold on the same terms as the Regal.

If there is any other model you would prefer write to-day for our complete catalogue.

WINNIPEG PIANO CO.

333 Portage Avenue - WINNIPEG, MAN.

Columbia Records Trade Mark Note the Notes

hoe. The plants are set from four to six inches apart in the row. Those that follow the double-row system, of course, do not plant exactly on top of the ridge, but a little to one side. The space in between can never be cultivated by horse and thus makes a lot of extra hand work, and really has no advantage over the single row.

The horse and expansion cultivator now comes into use for keeping the hollows free from weeds and hard crust. The cultivator should always run the same direction in the same row, especially after the runners start so as to avoid the least possible tearing of the new-set plants. A great deal of work can now be profitably spent on the plantation, keeping the weeds down. Late in the summer after the crop has been gathered from the bearing field the help is kept in the new-set field and this has much to do with getting a perfect set of plants.

The Winter Covering

Good depth of snow over the vines in the winter is looked for to prevent so much thawing and freezing. Therefore precautions such as brush and straw are provided and placed on the whole plantation just before freezing up of the ground. The crown of the ridge again comes in here in protecting the set from covering with ice. This smothers the plants sometimes and causes winter killing. Growth is pretty well started in the spring before the brush and straw are removed.

Weeding by hand wtih the hoe and trowel, doing the furrows with the horse, are now in order and can be kept up until within two weeks of picking time. On the new set of plants no fruit is allowed to develop the first year. All the energy of plants is directed towards making new runs and sets.

In picking a field is generally staked off in portions and each picker as he comes to the field is allotted a consecutive piece and is expected to finish thoroughly before leaving. There is usually an over-seer whose work is to see that the pickers do their work in good shape. The berries are picked in the ordinary quart box and then are gathered from the pickers in carriers and taken to the packing room where they are sorted and packed in the shipping crate.

A carrier holds sixteen boxes and a crate generally holds thirty-two of the quart boxes. The pickers get paid for picking by the box and are given a ticket for the amount when the boxes are gathered. These are cashed on demand.

In good weather a piece of land can be gone over every other day, but in the old sets twice a week is generally sufficient.

Two Tons of Berries

It is considered a fair crop which yields two tons and over per acre of berries. Some get more than this on small pieces. The berries spoil quickly after they are picked, and have to be sent by express to destination. Iced cars are sometimes used when making car shipments. A grower makes many

Copyright 1914 by R. J. Reynolds Tobacco Co.

Prince Albert is manufactured by the R. J. Reynolds Tobacco Co., at their factories in Winston-Salem, N. C., U. S. A., and is imported from the United States by Canadian dealers. Prince Albert is the largest selling brand of pipe smoking tobacco in the U. S.

You fire up a jimmy pipe

that's filled jamful of Prince Albert and you'll get what you're looking for in pipe smoke joy.

No use arguing or losing sleep about the question. There's one answer—Prince Albert! You, nor any other man, ever smoked tobacco with such class for bully deliciousness — flavor, fragrance, aroma!

Never was such pipe smoke tobacco as P.A., because it's made by a patented process that cuts out the sting and throat-parch and just leaves the stuff that makes every man who smokes P. A. joy'us *for life!*

You get this hot:—Polish up your smoking irons. Get 'em tuned for action. You buy some P. A. in the tidy red tin and go to it, because it's your right to be jimmy pipe joy'us! Since P. A. hit the turf, three men smoke pipes where one smoked a pipe before. And that average is growing right smart like.

You buy Prince Albert *everywhere* tobacco is sold. Stick to P. A., because P. A. will stick to you. Buy Prince Albert in the tidy, full 2-oz. red tins. And take a tip: Before you do the next thing, you get acquainted with

PRINCE ALBERT

the inter-national joy smoke

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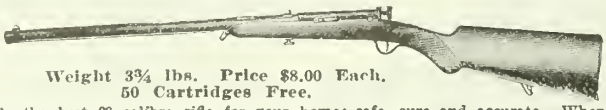
The "BAYARD" Semi-Automatic Rifle

THE "BAYARD" AUTO-COCKING AND EJECTING SEMI-AUTOMATIC RIFLE. 22 CAL. YOU PULL THE TRIGGER, THE BAYARD DOES THE REST.



Weight 3¾ lbs. Price $8.00 Each.
50 Cartridges Free.

The Bayard is positively the best 22 calibre rifle for your home; safe, sure and accurate. When you shoot the cartridge the recoil cocks the gun and throws out the empty shell, leaving it ready for the next shot. The rifle can be taken apart in less than two minutes for cleaning, oiling, etc. All parts are interchangeable. An easily adjusted Safety Catch permits the rifle to be locked when loaded. The Barrel is fitted with an adjustable target rear sight. Owing to its long range and its great accuracy, the Bayard Rifle recommends itself for target practice and small game shooting. Length over all 38½ inches. Length of Barrel, 19 inches. Weight, 3¾ lbs. Write for descriptive booklet. Sent, express charges paid, to your nearest express office on receipt of price, including Fifty Cartridges with each Rifle.

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Why they appeal to the Music Connoisseur

The latest models of the **NEWCOMBE PIANOS** combine years of experience with the latest ideas of the day. They are all one could wish for. Exquisite in purity and qualities of tone.

The only piano equipped with

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Newcombe Piano Players have a human expression of touch. Every detail is found perfect. Permanent tone and lifelong service guaranteed.

Call at our warerooms or ask our nearest agent. Also write for Catalogue "N." It shows the various styles.

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CLASSIFIED WANT ADS. are always noticed. They are read by wide-awake, intelligent dealers, who are on the lookout for favorable opportunities to fill their requirements.

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MAKE YOUR OWN WILL

You can make your own will in the privacy of your own home without expensive legal fees. A **"CODE" WILL FORM** with complete instructions is perfectly legal and incontestable. Sold by book sellers or stationers or sent direct on receipt of price **25c.** THE COPP CLARK CO. Limited, 513 Wellington St. West, **Toronto**

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DON'T TRY TO BE A CHAUFFEUR

or go to any school to learn, or part with your hard earned dollars until you have read our valuable guide FIRST. It tells what you should PAY and what you should GET. Do not be deceived by schools, which claim everything and give you nothing. YOU CAN'T AFFORD TO SPEND ONE CENT TILL YOU GET OUR GUIDE. It costs nothing and may save you many dollars. Write now for this FREE book.

PRACTICAL AUTO SCHOOL, 68-S Beaver St., New York

trips to the train per day when in the height of shipping. A carriage for conveying the crates to the train must have springs under the box so as to avoid bruising the berries as much as possible.

There are a number of varieties grown here among which may be mentioned the Dornan, Senator Dunlop, and the Sample. The farmers in this section are quite largely into strawberries and thus can co-operate in buying supplies and also in shipping.

As soon as picking is finished the hoeing starts again, but great care is taken to not injure the runners and new sets as these make the valuable plants for next year.

A plantation can be kept profitable for a number of years if the weeds are not allowed to get the upper hand. The berries get smaller as the vines increase in age.

For fertilizing now the best growers are doing away with the use of barnyard manure as much as possible on account of so many weed seeds undestroyed in it, and are resorting to a good home-mixed chemical fertilizer made to analyze 4, 8, and 10 per cent. This is put on at time of setting plants and each year a dressing may be made in the spring of the year.

Strawberries make lots of work to do them right, but in the end are considered a very profitable crop.

The demand for the berries seems to be growing faster than the supply and this years the growers had to refuse many orders. The price ranges from 8 to 12 and sometimes 14 cents per box.

The new plants are sometimes taken from the old plantation, but usually they are purchased from a person making a business of growing them the same as those that grow the berries. The methods followed in this are very similar to the growing of the berries with the exception that the plants are set out thicker together and then the following spring the whole piece is dug up and the plants sold and the land set out over again.

Truly the earth is a wonderful thing when it will produce so many good things for the human family to eat, but the luscious strawberry has everything else beaten.

THE ATMOSPHERE OF TABLE THINGS

In our present day and age we know that half the worth of living is in fully enjoying the things about us, and in having things about us that we can enjoy. Every home-maker creates an atmosphere in her home and sets a standard for the family when she selects her table furnishings. The graceful shape or the artistic design of the dinner dishes is insensibly felt and appreciated by the diners. Moreover, its charm is not lost on the home-maker herself as she arranges her table or puts the dishes away, and duty and pleasure thus go hand in hand.

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THE STUDY OF CORN. BY PROF. V. M. SHOESMITH. A most helpful book to all farmers and students interested in the selection and improvement of corn. It is profusely illustrated from photographs, all of which carry their own story and contribute their part in making pictures and text matter a clear, concise and interesting study of corn. Illustrated. 5 x 7 inches. 100 pages. Cloth. Price, net, $0.50. Technical Book Dept., MacLean Pub. Co., 143 University Ave., Toronto.

THE SADDLE HORSE. A COMPLETE GUIDE for riding and training. This is a complete and reliable guide book for all who desire to acquire the accomplishment of horsemanship and who wish to teach their animals how to perform various feats under the saddle. Illustrated. 5x7 inches. Cloth, $1.00. Technical Book Department, MacLean Pub. Co., 143 University Ave., Toronto.

Housekeepers' Helps

If You Know a Good Thing, Spread It. Timely Hints from our Readers

To Wax a Table Top

When your varnished table top gets marked it pays to have it waxed. A waxed top is not easily damaged by water spots or hot dishes; it remains in good condition for a long time and shows no white rings or scars as varnish does. Remove the varnish with wood alcohol or varnish remover, and sand-paper it, then stain the same as the legs, wax and rub down long and hard.—J. A. L., Ont.

Saving Young Turkeys

Turkeys often die with lice in their ears. For this put a ball of camphor in a small piece of cheese-cloth, and place in the nest before hatching. Another good plan is to rub their heads with grease when they are strong enough. Young turkeys are very delicate and should be kept in a dry place in damp weather.—B. L. R., Sask.

Uses for Common Salt

Painfuls corns may be removed in a week by applying a mixture of equal parts of salt and beef tallow.

Salt added to the bath water is tonic and stimulating. A pound of salt to four gallons of water makes about the same strength solution as sea water.—E. F. C., Ont.

The Wild Flower Garden

If you would have abundance of flowers in return for very little outlay and effort I can commend to you a packet of "A Wild Flower Garden Mixture." Prepare the ground well and plant the seeds the first of May, broadcast, along walks, fences, or in any untidy bare spot of ground that would otherwise be unsightly. Keep the bed clear from weeds and you will have a continuance of bloom during the summer. New flowers and well-known favorites will greet you each morning.

Plants that you remember to have seen in Granny's garden you will find in this wonder-bed. The writer's wild flower garden was one of the greatest successes met during years of flower cultivation. The mass of bloom, choice variety and the surprises that wait for each day make it worthy of a place in every garden.—Ich Dien.

To Clean Painted Plaster

If your kitchen walls have been painted over the plaster they will at this season no doubt, be a little blackened with smoke and grease from the kitchen range. Use one part milk to two parts warm water for cleaning, soaping the cloth as usual. After cleaning rinse the surface with clear water. This has left the walls clean and bright when well-known standard preparations failed.—Mrs. L. C. A., N. B.

The modern girl is a healthy, outdoor creature. She will help Nature and defy the weather by using

FAIRY SOAP

Made of pure vegetable oils and high grade materials —so clean, sweet and wholesome—it is agreeable to the tenderest skin and complexion.

It is the kind of soap particular people use. The oval cake fits the hand naturally and always floats within easy reach. It cleanses to the last atom.

"Have you a little 'Fairy' in your home?"

THE N.K. FAIRBANK COMPANY
LIMITED
MONTREAL

Fairy is the best soap for washing dainty fabrics and laces.

Fairy Soap—the white oval cake of floating purity.

Why bake or roast blindly?

The "Boss" glass door oven eliminates guesswork and worry. Without opening it you can see your bakings brown perfectly—never burning or chilling them. No heat is wasted, no time lost. The Boss saves fuel. It is fully asbestos lined, heats in two minutes, bakes uniformly.

Try the BOSS OVEN 30 days

Order a "BOSS" from your dealer to-day. Test it 30 days. Your money refunded immediately if not satisfactory. **Guaranteed to work on good Oil, Gasoline or Gas Stoves.** Patented glass door guaranteed not to break from heat. Genuine stamped "BOSS."

Write now for free booklet and dealers' names.

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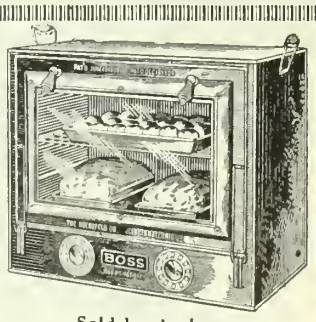

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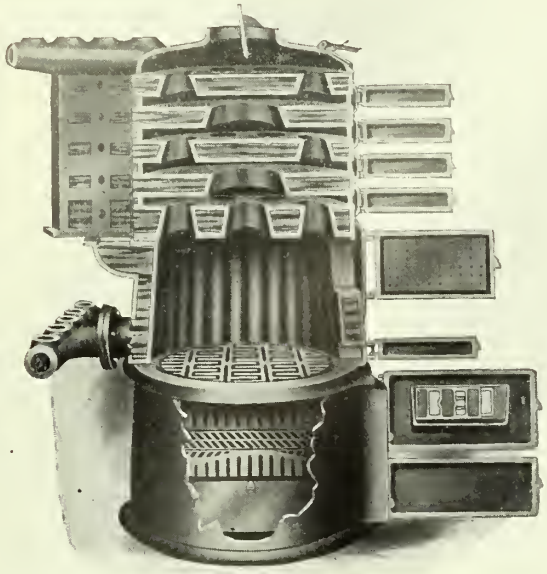

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Showing Large Flared Flues

IN the early Spring or Fall, when light fires only are needed, the house may be comfortably warmed with a quick fire of any available waste fuel material.

The winter fuel may be whatever kind of coal is cheapest in your locality. Hard or soft coal, or "free burning anthracite"—the "Sovereign" will draw a full measure of heat from any kind of coal you put into the fire box.

Or you will get equally good results in heat from cut or rough wood. In the course of the winter you may change from one kind of fuel to another without adjusting anything about the boiler, except to open or close the draft dampers as required.

The secret of the "Sovereign" adaptability for all kinds of fuel is in the Large Flared Flues. Write us for further information if you do not thoroughly understand the importance of this improvement in boiler construction.

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St. John, N.B.—W. H. Campbell, 16 Water Street
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Make $2000.00 more per Year

Hundreds of farmers **right now** are making from $1000.00 to $2000.00 a year extra money, besides keeping up their farm work, making wells with the

Improved Powers Boring and Drilling Machine

Bores 100 ft. in 10 hours. One man can run it; a team operates it and easily moves it over any road; Bores slate, coal, soapstone—everything except hard rock, and it drills that. No tower or staking—rotates its own drill.

20 years actual service all over the world have proven this the fastest and most convenient well machine made. Easy terms. Write for catalog.

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Fresh Egg Dishes for Easter Menus

Eggs Poached in Milk

Drop eggs in to hot milk and cook slowly until set. Lift the eggs onto a hot platter, add a piece of butter to the milk, thicken with rolled cracker crumbs, season with salt and pepper and pour the sauce over the eggs.

Stuffed Eggs

Boil the eggs until the yolk is dry and mealy. Cool, shell and cut off the tops Scoop out the yolk and mix with mayonnaise dressing, or with mayonnaise, chopped ham and nuts. Put the mixture back into the white, and replace the top that was cut off. For lunches or picnic baskets fasten the top on with a tooth-pick.

Egg Fondue

Allow two fresh eggs for each person to be served, grated cheese about one-third as much in quantity as the eggs, and butter half the weight of the cheese. Put the butter and cheese into a saucepan and stir over the fire. As they begin to melt, break the eggs over them and stir briskly until well scrambled. Season with salt and pepper and serve hot.

Holland Eggs

Beat four tablespoons of flour and one teaspoonful of baking-powder with enough sweet milk to make a rather stiff batter. Add three or four well-beaten eggs and beat again. Thin with a pint of sweet milk and pour into a hot buttered frying-pan. Cover and set over the fire. After a few minutes slip a thin knife or spatula under and around the edges. When it looks light and fluffy and seems well-done underneath, turn the whole cake over with a cake-turner. When done slip on to a hot plate. It should be very light and golden brown in color.

Spanish Omelet

Take six eggs. Beat the yolks with three tablespoons of cold water, season with a half teaspoon of salt and a dash of pepper. Beat the whites stiff and fold into the yolks. Turn into a hot buttered spider, and when set on the bottom place in the oven for a few seconds to cook the top. When well done (it will spring back when touched with the finger) fold, turn on a hot platter and pour over it a tomato sauce made as follows: Cook a chopped onion with the liquid from a can of tomatoes, until the onion is soft. Put into a small saucepan over the fire a tablespoon of butter and when melted and frothy, add two tablespoons flour. Blend these, pour in the hot tomato liquid and cook until smooth and thickened. Pour around the omelet and serve.

Our Pattern Pages

Patterns will be sent Post Free on Receipt of Price. Address Pattern Department, Farmer's Magazine, 143-149 University Avenue, Toronto

6453---LADY'S DRESS

In this very stylish design the new vest idea is carried out in the bodice. This is plain and has a front closing with two points at the waist, hanging over the girdle. At the neck there is a small chemisette and a low ornamental collar. The sleeves are plain at the top and slightly gathered at the wrist. The skirt has three gores and is gracefully draped. The closing is in front.

The dress pattern, No. 6453, is cut in sizes 34 to 42 inches bust measure. Medium size requires 4⅛ yards of 44-inch material, with 1¼ yards of 24-inch plain fabric and 1⅞ yards of fur edging.

Price of pattern, 15 cents.

6417---LADY'S SHIRT WAIST

This plain, serviceable model has no frills anywhere. It closes without the usual band down the front, but it has a useful patch pocket. The turnover collar is soft and has deep points, and the plain shirt sleeve is gathered into a regulation mannish cuff. Such a design is good for linen, French flannel and other serviceable materials.

The pattern, 6417, is cut in sizes 34 to 42 inches bust measure. Medium size requires 3⅜ yards of 27-inch material.

Price of pattern, 10 cents.

6510---GIRL'S DRESS

One or two materials can be used to make this dress. The dress can be made with either the long or short sleeves. The

Save a Dollar

SPECIAL OFFER

TO FARM HOMES

To Introduce the Merits of

Bull Dog Cleansers

You can have all the articles listed below for $1.50. The regular price for all these articles would cost you $2.50. This offer is merely to introduce these articles to you on their merits—it is absolutely the first and last chance. Take it while it lasts. These are all Bulldog Brand.

	Regular price.
1 Can of Floor Wax	50c
1 Can of Cock Roach Killer	75c
1 Pkg. of Kid Glove Cleaner	25c
1 Pkg. of Grease Spot Remover	25c
1 Box of Blacking	10c
1 Box of Tan Shoe Polish	10c
1 Pkg. Ammonia Powder	10c
1 Pkg. Chloride Lime	10c
1 Pkg. Tube of Rust Remover	35c
Total	$2.50

All these can be had for $1.50 during April. Absolutely first and last opportunity. Order to-day and make a saving of one dollar.

A Free Bull Dog Watch Fob given to the first fifty orders sent in. Don't wait. Be one of the lucky ones.

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Unsurpassed for beauty and fragrance, having the odor of the natural Violet flower.

Is composed of the very finest materials obtainable, scientifically and chemically combined, thus insuring the user of an absolutely pure soap.

When used for the toilet the whole room will become permeated with the odor characteristic only of the natural Violet flower.

If your dealer cannot supply you write us direct, Dept. M.

Send 10c for single cake, or 25c for box of 3 cakes.

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WINDSOR

Windsor Dairy Salt dissolves evenly and gives a delicious flavor to the butter.

DAIRY

Practically every big prize at the big fairs was won by Butter made with Windsor Table Salt. 119

SALT

Dollars Do Double Duty

In the hands of those thrifty, capable women who know and use

Maypole Soap

The Clean, Easy Home Dye

They keep their homes, their children and themselves looking fresh and attractive at a very moderate cost, because Maypole Soap makes old things look like new, and often doubles their length of service.

Maypole Soap gives rich, even, lustrous colors, fadeless in sun or rain. Dyes cotton, wool, silk or mixtures. Does not stain hands or kettles.

24 colors—will give any shade. Colors 10c.—Black 15c.—at your dealer's or postpaid with free booklet, "How to Dye," from

FRANK L. BENEDICT & CO.
MONTREAL

sleeves and body can be made in one piece, or the separate sleeves may be used. The skirt is cut in three gores.

The pattern, 6510, is cut in sizes 6, 8, 10, 12 and 14 years. Age 8 years requires 2¼ yards of 36-inch material and ⅞-yard of 27-inch contrasting goods. If made of one material it requires 2¼ yards of 44-inch material.

Price of pattern, 10 cents.

6456---LADY'S DRESS

This model shows the elegance of the more simple styles. It has a very plain blouse, with the drop-shoulder and plain, full-length sleeves. The neck is trimmed with a pretty collar, and the closing is in front. The skirt may be made in one piece or in two, as preferred. It also closes in front.

Cheviot, serge, velveteen, satin, messaline, and many of the novelty woollen fabrics are suitable for a dress in this style.

The dress pattern, No. 6456, is cut in sizes 34 to 42 inches bust measure. Medium size requires 3 yards of 50-inch material, with ½ yard of 27-inch silk for the collar.

Price of pattern, 15 cents.

5262---LADY'S APRON

This apron is just the thing for wearing around the kitchen, as it covers the entire dress. It fastens at each shoulder with a button and buttonhole. There is a pocket in each side of the front.

Linen, gingham or percale can be used to make this apron.

The pattern, 5292, is cut in sizes 32, 36, 40 and 44 inches bust measure. Medium

St Lawrence Sugar

Children Need Sugar

Pure sugar is necessary to the health of young or old. Good home-made candy, sugar on porridge, fruit or bread—not only pleases but stimulates.

Buy St. Lawrence Extra Granulated in bags and be sure of the finest pure cane sugar, untouched by hand from factory to your kitchen.

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WASH-BOARD YOKE

The washboard has been a hard taskmaster for generations, but now the washing machine has taken its place.

The New Century Hand Washer eliminates the back-breaking rubbing, thus making washing a pleasure instead of a hardship. It runs easily and does better and quicker work than the old method.

No other machine can be built on the New Century principle, because its features are patented. The rust-proof steel ring, that prevents warping, adds years of wear to its life.

See it at your dealer's or send to us for information.

CUMMER-DOWSWELL Limited
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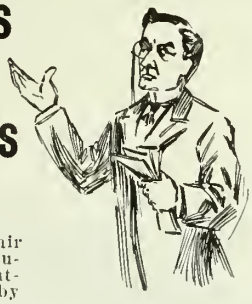
BOYS' OWN TOY MAKER

Tells how to make a Talking Machine, Camera, Electrical Motor, Bicycle Boat, Canoe, Boomerang, Bobsled, Wind Mill, Microscope, Water Wheel and Motor, Stilts, Toboggan, Snow Coaster and Sail Boat, Telephone, Electric Bell, Railroad, Wind Mobile, Paddle Raft, Traps, Kites, etc. All 10c, postpaid.

J. C. DORN, 707 So. Dearborn St., Dept. 42, Chicago, Ill.

PIMPLES
BLOTCHES
BLACKHEADS



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and all skin, scalp, hair and complexional troubles successfully treated at our offices or by mail. We care not how stubborn they may be. We have a record of nearly twenty years of success. Read what Mr. J. B. Wiggins, of Claude, Ont., says of our treatment for

Red Nose

"Although I don't know the taste of liquor, I had what any person not knowing me would call a 'whiskey nose.' I used your treatment according to instructions for about six weeks, when it appeared to be quite well, and there has not been a spot on it since. Before using your treatment I consulted three doctors, who all said there could be nothing done for me. It troubled me for about ten years. During the last two years it was sore to the touch all the time. I was even told there was cancer starting on it. Your treatment has done so much for me that I would consider the money well spent if it had cost me ten times what it did. You may use this unasked testimonial any way you wish."
Mr. Wiggins was cured for $4.50.

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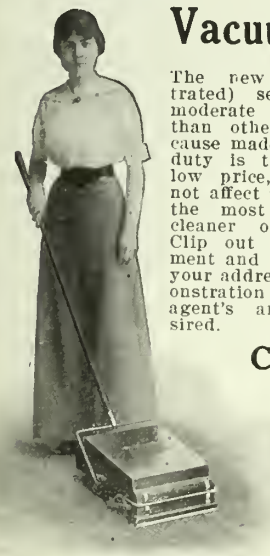
A Good Buy—
not an extravagance

Every house requires constant cleaning; every housekeeper knows how hard it is to accomplish. "Dusting"—scattering the dust and dirt does not clean your house. The logical, easiest and, in the end, the cheapest way is to use a

Cadillac Hand Vacuum Cleaner



The new model (illustrated) sells at a very moderate price; cheaper than other machines because made in Canada and duty is thus saved. Its low price, however, does not affect its work as it is the most efficient hand cleaner on the market. Clip out this advertisement and send to us with your address. FREE demonstration at our nearest agent's arranged if desired.

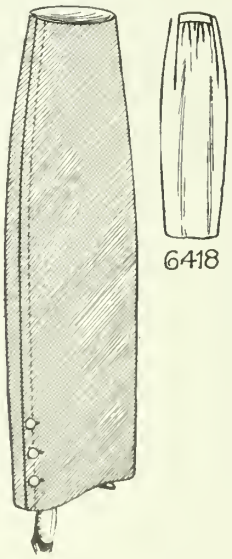
Clements Mfg. Co., Ltd.
78 Duchess St.
Toronto Ont.

Montreal Agents: — Diamond Light & Heating Co., Ltd., 308 Craig St. West.

size requires 4¾ yards of 27-inch material or 3¾ yards of 36 inches wide.
Price of pattern, 10 cents.

6418--- LADY'S SKIRT

An excellent tailored design, suitable for use with a separate coat or as part of a costume, is shown in this model. It is a two-gore skirt, with raised waistline, plain in front, and slightly gathered across the centre of the back.

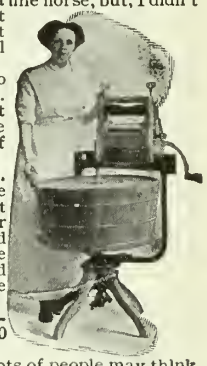


6418

The skirt pattern, No. 6418, is cut in sizes 22 to 30 inches waist measure. Medium size requires 2⅝ yards of material 36, 44 or 54 inches wide.
Price of pattern, 10 cents.

THIS WASHER MUST PAY FOR ITSELF.

A MAN tried to sell me a horse once. He said it was a fine horse and had nothing the matter with it. I wanted a fine horse, but, I didn't know anything about horses much. And I didn't know the man very well either.



So I told him I wanted to try the horse for a month. He said "All right," but pay me first, and I'll give you back your money if the horse isn't all right."

Well, I didn't like that. I was afraid the horse was'nt "all right" and that I might have to whistle for my money if I once parted with it. So I didn't buy the horse, although I wanted it badly. Now, this set me thinking,

You see I make Washing Machines—the "1900 Gravity" Washer.

And I said to myself, lots of people may think about my Washing Machine as I thought about the horse, and about the man who owned it.

But I'd never know, because they wouldn't write and tell me. You see I sell my Washing Machines by mail. I have sold over half a million that way. So, thought I, it is only fair enough to let people try my Washing Machines for a month, before they pay for them, just as I wanted to try the horse.

Now, I know what our "1900 Gravity" Washer will do. I know it will wash the clothes, without wearing or tearing them, in less than half the time they can be washed by hand or by any other machine.

I know it will wash a tub full of very dirty clothes in Six Minutes. I know no other machine ever invented can do that, without wearing the clothes. Our "1900 Gravity" Washer does the work so easy that a child can run it almost as well as a strong woman, and it don't wear the clothes, fray the edges, nor break buttons, the way all other machines do.

It just drives soapy water clear through the fibres of the clothes like a force pump might.

So, said I to myself, I will do with my "1900 Gravity" Washer what I wanted the man to do with the horse. Only I won't wait for people to ask me. I'll offer first, and I'll make good the offer every time.

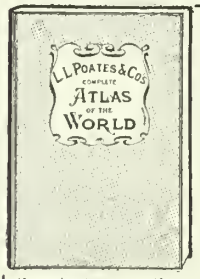
Let me send you a "1900 Gravity" Washer on a month's free trial. I'll pay the freight out of my own pocket, and if you don't want the machine after you've used it a month, I'll take it back and pay the freight too. Surely that is fair enough, isn't it.

Doesn't it prove that the "1900 Gravity" Washer must be all that I say it is?

And you can pay me out of what it saves for you. It will save its whole cost in a few months in wear and tear on the clothes alone. And then it will save 50 to 75 cents a week over that in washwoman's wages. If you keep the machine after the month's trial, I'll let you pay for it out of what it saves you. If it saves you 60 cents a week, send me 50 cents a week 'till paid for. I'll take that cheerfully, and I'll wait for my money until the machine itself earns the balance.

Drop me a line to-day, and let me send you a book about the "1900 Gravity" Washer that washes clothes in six minutes.

Address me personally **Y. A. Morris**, Manager
1900 Washer Co., 357 Yonge Street
Toronto, Ont.



KNOW CANADA

Every reader of "Farmer's Magazine" should know his own country and know its relative position to all countries of the world. This is possible by having for reference

L. L. POATES & CO.'S COMPLETE ATLAS OF THE WORLD

It has 193 pages, size 7 x 10, convenient to carry in your pocket; will fit your book-shelf or pigeon-hole of your desk. The maps occupy two pages, in five and six colors. Each with up-to-the-minute corrections and additions. 16 MAPS, SHOWING CANADA and each of the Provinces of the Dominion, besides maps of the United States and its possessions, including the Panama Canal, England, Ireland, Scotland, as well as Europe, Asia and Africa. In fact, a complete map of each country of the world. $1.50 in Cloth, $2.00 in Leather. Carriage charges paid to all parts of the World. Bible Atlas by Townsend McCoun, A.M., with 121 pages of maps and 120 pages of text, $1.50. Sample pages sent free; write for them to-day. Discount to Book Trade. Agents Wanted.
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Without Lessons or Knowledge of Music Any One Can Play the Piano or Organ in One Hour.

Wonderful New System that Even a Child Can Use.

He—"You surprised me! You told me yesterday you couldn't play a note!"
She—"I couldn't; I learned to play in one hour by the wonderful 'Easy Method Music!'"

Impossible, you say? Let us prove it at our expense. We will teach you to play the piano or organ and will not ask one cent until you can play.

A musical genius from Chicago has invented a wonderful system whereby anyone can learn to play the Piano or Organ in one hour. With this new method you don't have to know one note from another yet in an hour of practice you can be playing your favorite music with all the fingers of both hands and playing it well.

The invention is so simple that even a child can now master music without costly instruction. Anyone can have this new method on a free trial merely by asking. Simply write saying, "Send me the Easy Form Music Method as announced in

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FREE TRIAL

The complete system together with 100 pieces of music will then be sent to you Free, all charges prepaid and absolutely not one cent to pay. You keep it seven days to thoroughly prove it is all that is claimed for it, then if you are satisfied, send us $1.50 and one dollar a month until $6.50 in all is paid. If you are not delighted with it, send it back in seven days and you will have risked nothing and will be under no obligations to us.

Be sure to state number of white keys on your piano or organ, also post office. Address Easy Method Music Co, 329 Wilson Bldg., Toronto, Canada.

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absolutely removes superfluous hair, toughest beard, totally destroying roots without injury to the most delicate skin. Makes the skin soft and velvety. We offer $50.00 for its failure. Send 10c to cover cost of mailing and get sample. Prove its value by personal test. Price of complete treatment, $1.00. Address Cooper & Co., Dept. 17, No. 219 Commissioners Street, Montreal.

The Charm of the Dining Room

Pleasing Wall, Windows and Pictures with Plain Furniture make the Best Setting for Attractive Table Things

By WINNIFRED MARCHAND

This is the second of our series of articles dealing with the decorating and furnishing the different rooms of a farm house. We will be glad to offer suggestions on this subject to any one writing us, stating the size and shape of their room, number of windows, and where they are placed, exposure, furniture on hand to be used in the room, and the amount of money they wish to spend. It would be well to mention any particular preference in color or materials.

It need not cost much to furnish a dining-room. So far as furniture is concerned its real needs are few, and the less unnecessary furniture we have the better. The charm of the dining-room lies in its simplicity and a pleasing scheme of decoration.

A cheerful dining-room—and cheerfulness is the most important feature unless we put it on a par with convenience—should have an exposure which gives plenty of light, with a window set to catch the early morning sun. This helps a lot to start the day right. If your house has been badly planned with a dining-room having a shady exposure and inclined to be dark, a feeling of cheerfulness may be given by the warmth of color used in the decoration. A strong, vigorous treatment that would be wearisome in a living room may be used here as the dining-room is occupied only at certain hours of the day. A plain wall paper makes a better ground for dining-room furniture, and in a dark room like this it might be of a dull Venetian red, the draperies a shade of olive having a good deal of yellow in it, and the rug a deep dull red with old blue and olive. This sounds like an odd mixture, but it is suggestive only for a room that needs something to kindle its dullness.

Yellow is a warm exhilarating color, always suitable for a north room, and tan, buff, golden brown, old rose or terra cotta may be used with good effects, provided the furnishings harmonize. Southerly rooms, or those flooded with light look their best in the cool tans, dull browns, greys, grey blues, or lavender. Rooms facing east or west offer more scope for choice of colors.

In almost every case a plain paper, or one with an inconspicuous shadow pattern makes the best ground for dining-room walls. This may run just up to the plate-rail, having a drop ceiling in cream or a lighter shade of the wall color. A frieze about eighteen inches wide, with bright dashes of color makes a striking trimming for dull walls. One of the most handsome decorations for a dining-room is to be found in the use of wood-paneling and burlap. A high wainscot with panels framed in brown stained wood and filled in with brown burlap, and the plastered walls and ceiling above painted buff with a stenciled design above every third or fourth panel, gives one of the most dignified rooms ever designed.

It is always better to keep the walls plain and make the windows the decorative feature. Many windows or groups of windows offer fine possibilities in this. Plain hem-stitched scrim next the windows, with shade curtains of colored linen taffeta in figured designs are very attractive, but the shade curtains should be washable. I have seen this carried out with hemstitched cheesecloth and turkey red cotton, and it looked very well. An-

other inexpensive style of curtain that is as striking as it is durable is made from factory cotton with insertion, hand-made, of carpet warp, set in around the edge. None of these curtains should come below the window sill.

Every one realizes that the rug should correspond in color with the walls of a room. Perhaps it is not so common to consider that if the rug has a plain or large pattern it will show every bit of dust or crumb that happens to fall, or that only a rug with heavy edges will lie flat, or that a dining-room rug should be large enough not to be caught by the back legs of the chairs when they are pushed back from the table.

Built-in furniture gives a substantial and dignified air to any room, and its plainness is particularly suitable for a dining-room. Bright pieces of china on a plate-rail, and choice bits of glass-ware are sometimes lost in the glare of beveled-mirrored, bowed-front, glued-on sideboards, the purpose of whose existence seems to be nothing but display. Dining-room chairs, too, while they are never used for very long at a time, should be comfortable. You are never safe in buying a chair until you have sat in it. Plain designs with leather or leatherette seats give longest satisfaction. A round table is supposed to impart a special atmosphere of sociability, but the rectangular lines of a square table seem better adapted to simple methods of setting and serving meals.

The feature in which we seem to use least originality in home furnishing is in selecting pictures for a dining-room. Can you imagine a dining-room without the usual pictures of fruit and game, but a few prints of good old masterpieces framed alike in oak or some dark inconspicuous material? Where the walls are rather light, sepia or black and white pictures look well. Anyway the more a picture means, the more worth having it is.

Growing plants always add a cheerful note to a dining-room and a soft shaded light lowered over the centre of the table gives a charm to even the plainest room.

DIRECTIONS FOR DETERMINING ACID SOILS

Add enough water to a half-cup of soil to make the consistency of thick cake batter, and insert blue litmus paper which may be obtained from a druggist, into it, without touching the part inserted, with the hands. If, when you rinse the inserted end, after an hour or so, it is very much reddened, the soil very likely needs liming. A pinkish color indicates a great deal of acid vegetable matter; brick-red, an absence of acid vegetable matter.

Ammonia water is also used to determine the acidity of soil. Add a teaspoonful of ammonia water to a half-glass of water containing a tablespoonful of soil. If the mixture becomes brown or black after standing for some hours, acid vegetable matter is probably present.

For most plants, lime is not required if the test shows only slight acidity.

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Payable without charge in Canada (Yukon excepted) and Nfld. at any Bank—in U.S.A. at all principal cities—and in Great Britain and Ireland at over 500 points.

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MADE BY THE COTTAGERS OF BUCKINGHAMSHIRE.

This is the old-fashioned lace made on the cushion, and was first introduced into England by the Flemish Refugees. It is still made by the village women in their quaint old way.

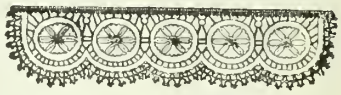
Our Laces were awarded the Gold Medal at the Festival of Empire and Imperial Exhibition, Crystal Palace, LONDON, ENG., for general excellence of workmanship.

Buy some of this hand-made Pillow Lace, it lasts MANY times longer than machine-made variety, and imparts an air of distinction to the possessor, at the same time supporting the village lace-makers, bringing them little comforts otherwise unobtainable on an agricultural man's wage. Write for descriptive little treatise, entitled "The Pride of North Bucks," containing 200 striking examples of the lace-makers' art, and is sent post free to any part of the world. Lace for every purpose can be obtained, and within reach of the most modest purse.

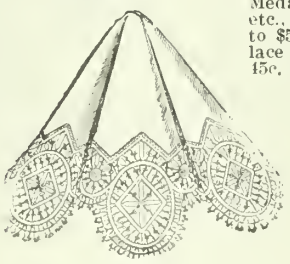
COLLAR—Pure Linen. $1.00.

Collars, Fronts, Plastrons, Jabots, Yokes, Fichus, Berthes, Handkerchiefs, Stocks, Camisoles, Chemise Sets, Tea Cloths, Table Centres, D'Oylies, Mats, Medallions, Quaker and Peter Pan Sets, etc., from 25c, 60c, $1.00, $1.50, $2.00 up to $5.00 each. Over 300 designs in yard lace and insertion from 10c, 15c, 25c, 45c, up to $3.00 per yard.

Every sale, however small, is a support to the industry



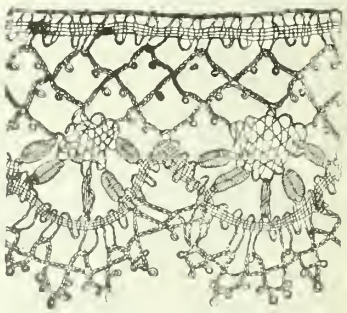
(1½ in. deep.) STOCK—Wheel Design. Price 25c. each. (Half shown.)



DAINTY HANDKIE—70c. No. 910.—Lace 1¼ in. deep.

IRISH CROCHET.

Mrs. Armstrong having over 100 Irish peasant girls connected with her industry, some beautiful examples of Irish hand-made laces may be obtained. All work being sold direct from the lace-makers, both the workers and customers derive great advantage.



No. 122.—30c. per yard.

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Wheat $2.00 a Bushel

Can We Make a Bigger Price out of our Grain by Feeding It?

By ELUID KESTER

Under the caption of "Making Good in 12 Years" in the February number of Farmer's Magazine, a writer makes the above statement. Beyond the mere assertion, there is nothing to tell us how he arrives at the conclusion, or how Mr. Wilkinson figured out his returns. A complete statement would be interesting news for every farmer. For there is every disposition on the part of feeders to get just such results as are claimed here.

If we, as farmers can secure better prices for our grains by selling them on foot, then that is the form of marketing we must follow. The converting of wheat, barley, peas and oats into pork, beef and poultry adds to the process a great deal of labor and if it can be shown that the feeder will get wages for his time and interest on his extra investment by so doing, and at the same time adding to the selling price per bushel of grain, then it is good news to all of us.

The keeping of live stock on the farm has several advantages. Live stock adds greatly to the farm fertility by returning to the soil the needed plant foods. They give employment to farm labor the year round, thus tending to stability of rural conditions. The returns come in at all seasons. The farmer depends on no one thing for his income. In other words he has several baskets with eggs in.

Take the case of hogs. A farmer I know tells me that he can make money on hogs selling at $5.00 live weight. That means that there is a considerable profit for him when he gets $7.50 per cwt. If he makes money at $5.00 when barley sells at 60 cents a bushel, what price would the $7.50 valuation make of the bushel of barley? If it takes 5 lbs. of concentrates to make one lb. of pork, and if these cost 6¼c. then he is evidently wrong in his $5 money making game, unless he can get his concentrates cheaply in the form of brewers' grains, tankage, alfalfa, etc.

Again in estimating our returns for a bushel of grain, must we allow wages for labor as well as interest on money invested? Clearly we must do so before we can place to the price of the bushel of grain the additional price.

I am inclined to think Mr. Wilkinson has picked on the most likely form of proving this point, when he chose poultry. At any rate, let us hear from some others on this question.

Can we make $1.25 or $1.50 on wheat by feeding it to hogs or cattle? Write your impressions to the Editor at once.

Hatching by Wholesale

A Promising Outlook for the Day-old Chick Industry in Canada

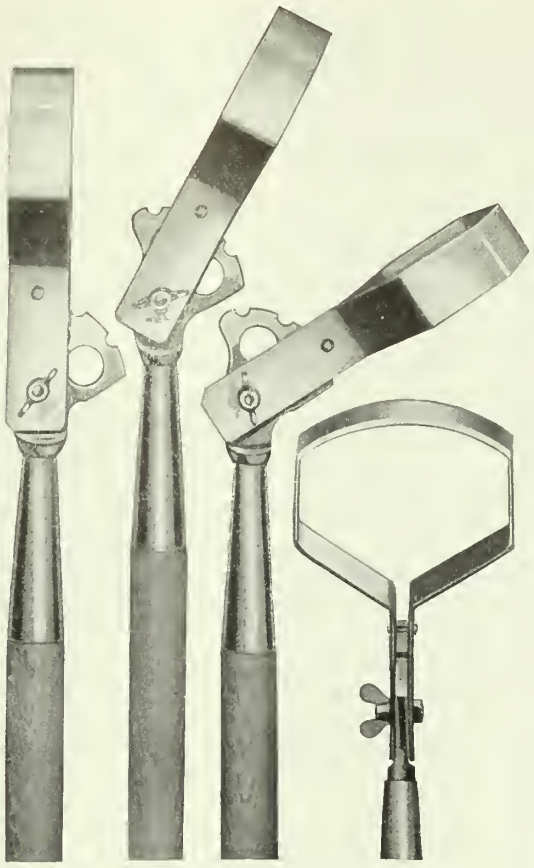
By E. I. FARRINGTON

THE COMING of mammoth hatching machines bids fair to revolutionize the poultry industry within a few years. Even now conditions are changing so rapidly that many poultry keepers find it difficult to keep up with them. More than ever specialization is coming into favor. The big hatching machines have not made their way very rapidly in Canada, but already a considerable number of them have been set up. With them, inevitably has come the marketing of day-old chicks. In the States, the day-old chick industry has already assumed phenomenal proportions, and no one is prepared to say where it will end. The industry has developed somewhat more slowly in the Dominion perhaps, but the demand for day-old chicks is already extensive.

Even a small incubator of the new type will accommodate 1,200 eggs at one time and the larger machines hold thirty or forty thousand. With chicks breaking the shells at the rate of a thousand a day, hatching by wholesale has obviously become a settled fact. One of the largest concerns in New England, with three mammoth incubators, expects to sell 100,000 day-old chicks before the end of the present season. In order to do that it is necessary, of course, to have a great number of laying hens. On this plant the number approximates 2,000.

Amateurs, who are not well situated for hatching chickens, are buying their stock from these large hatching plants, which are now being established in every community. It is prophesied that within a few years every well-populated section will have its mammoth chicken hatchery, which will replace the broody hen and the small machine. The price charged for day-old chicks runs from ten to twenty cents apiece, except in the case of fancy stock, when it may go to fifty cents. It is an easy matter to ship the chickens, even for long distances, in the corrugated boxes which have been devised for the purpose. These boxes are light, inexpensive, and well ventilated, and the chickens travel in them safely. Oftentimes shipments are made of a thousand miles or more, but it is always well to get one's stock as near home as possible.

Poultry keepers who have entered this new business of marketing day-old chicks seem to be flooded with orders, and in some ways the remarkable demand is a detriment. The owners of hatching plants are often inclined to buy



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1447 S. Bd'wy. Denver, Colo., Aug. 29th, '13.

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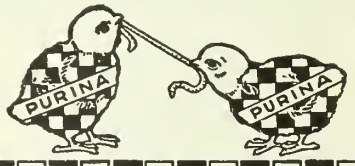

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It will save you money by telling you how to obtain the experiences and methods of others who have made a success of poultry raising. It shows the best kind of Incubator and Hover. Tells how to build your own Brooders. Gives the kind of feed to use at the different ages of a chick, and "Reasons Why" the Famous

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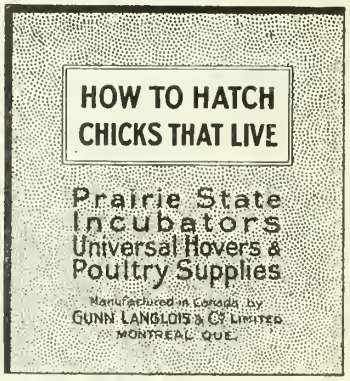

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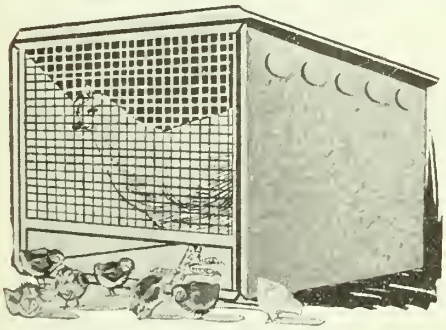

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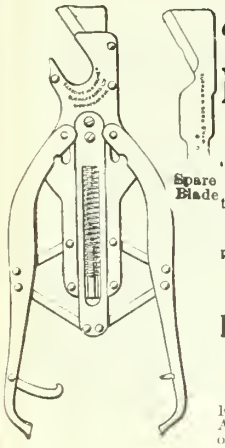

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eggs wherever they can pick them up, without much regard to the character of the flocks from which they came. As a result, the chickens do not live after they have been sold or else develop into birds which are stunted and generally unsatisfactory. In the end the man who is careful to sell only chicks from high-class stock will get the trade.

Along with this day-old chick industry has come the business of hatching eggs to order—custom hatching, it is called. Breeders who have built up a good strain of poultry, but do not like to bother with broody hens or the care of incubators, carry or send their eggs to the hatching plants, where they are incubated for them, a small fee being charged, perhaps two or three cents an egg. This branch of the business is also growing rapidly and some plants are making a feature of custom hatching. When this sort of work is done, it is not necessary to keep any hens and the custom hatching plant may be located in the basement of a city house as well as in the country. Some women are taking up this line, as the work is light and the rewards reasonably sure. Of course, it is necessary to gain a little experience before undertaking to hatch eggs on a large scale.

The care of a mammoth incubator is much less than that of several small machines. A little coal stove supplies the heat and all the work of filling and cleaning kerosene lamps is done away with. The machines are divided into compartments, each of which may be used independently of the others.

Quite naturally mammoth incubators have been followed by mammoth brooders. It used to be considered an axiom that no brooder should be given more than fifty chickens, whatever claim the manufacturers might make for it. The new mammoth brooders or hovers, as they are called, provide for from 500 to 1,500 chickens in one lot. The possibility of hovering so large a number of young chickens in one flock may sound absurd to the old-time breeder, but it is a fact that the new system is being used with great success, while economizing time and labor to a wonderful degree.

Some of these hovers are heated with coal oil while others burn coal. Generally the hover itself is so arranged that it can be lifted to the ceiling of the brooder house by means of a rope and pulley and it can easily be adjusted to chickens of any size. With the new plan, one large room without partitions is used, instead of a long series of small compartments, and at night the chickens arrange themselves in a great circle around the hover, retreating or going closer in order to regulate the temperature to suit their needs.

If you will be nothing, just wait to be somebody.

—Dr. Marden.

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are made right, and with the free advice and lessons I give my customers, no one can possibly fail to make biggest hatches of strongest chicks. Write me. A postal brings all facts, book, prices and proposition. *"Proper Care and Feeding of Chicks, Ducks and Turkeys"—sent for 10c.* **Successful Grain Sprouters** furnish green food, make hens lay in winter. Ask about my high grade poultry—all leading varieties.

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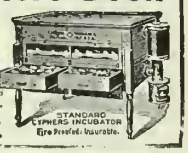

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200 with Bath. Rates $1.50 to $5.00.
European Plan. The best
Cafe in the City.

FRANK KIMBLE, Manager

Spanish Gold

(Continued from page 38.)

now and tell me if the other two aren't following us."

They were. The Major unwillingly admitted the fact.

"They're certainly coming this way," he said. "But I don't see why you should take it for granted that they're tracking us."

"Come on," said Meldon.

He reached the house of the woman to whom he had talked on the occasion of his second interview with Mary Kate. He tapped at the door and entered, dragging the Major after him.

"Good morning to you, Mrs. O'Flaherty," he said. "I'm glad to see the baby looking well."

"He's finely, thanks be to God."

"Do you happen to want to have him vaccinated or anything of that sort?"

"I do not."

"I dare say you're right. I asked the question because there's a gentleman coming along this way in a few minutes who's a great doctor. He's on his holiday, of course; but I'm sure he'd vaccinate a fine boy like yours if you asked him to."

"Would he give me a bottle for the old woman, do you think?"

"He would, of course. What's the matter with her?"

"She's ravelling in her talk this long time, and sorra the bit she'll stir out of her bed, and me with all the work to do and never a one to give me a hand."

"That's the very sort of case this doctor likes best. Come along with me now and we'll speak to him. But don't be calling him 'doctor' to his face. It's a kind of lord he is. Call him 'Sir Giles' when you speak to him."

Meldon, Mrs. O'Flaherty with her baby in her arms, and Major Kent, who lingered a little behind, set out to meet Sir Giles and Langton.

"Good morning, Sir Giles," said Meldon. "Good morning, Mr. Langton. You got home safe yesterday off that cliff? That's right. Take my advice and don't risk it again. There isn't a bird's egg in the world worth a broken neck. Do you happen to have a bottle about you?"

Sir Giles scowled. Meldon's good-humored greeting evidently irritated him.

"No," he said. "I haven't."

"Oh, well," said Meldon, "it can't be helped. I dare say you have one on the yacht."

"I don't know what you're talking about," said Sir Giles. "Do you, Langton?"

"Damned if I do?" said Langton. "What are you talking about, eh?"

"Bottles," said Meldon. "I was asking if you had a bottle on the yacht."

"What the devil is it to you whether I have or not?" said Sir Giles.

"Oh, nothing to me—nothing whatever—only Mrs. O'Flaherty wants a bottle for her old mother-in-law. Isn't that so, Mrs. O'Flaherty?"

"It is, your honor. It is, Sir Giles. The old woman's ravelling in her talk

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this long time, and what's more, she won't stir out of her bed; and if your honor would give her a bottle—"

"Come now," said Meldon, "you won't refuse her, Sir Giles. It's a small request. What's a bottle to you one way or another? Slip back to the yacht and get her one. It won't take you an hour. The Major and I will wait about till you come back."

He winked at the Major as he spoke —a large obvious wink, which neither Sir Giles nor Langton could fail to notice.

"Now look here, Mr. John James Meldon——" said Sir Giles.

"Joseph John," said Meldon, "not that it matters; only just in case anything should turn up afterwards, it's as well to be accurate."

"I really don't know," said Sir Giles, "whether you're more knave or fool, but if you think you're going to send me back to the yacht on a hunt after a bottle or some such ridiculous thing while you go round the base of the cliffs again, you're greatly mistaken."

"Mrs. O'Flaherty," said Meldon, "Sir Giles' temper is a little short this morning, but he's a good man at heart. Try him for the bottle again to-morrow and you'll very likely get one. Good morning, Sir Giles. Good morning, Mr. Langton. This is better than grubbing about among fusty old manuscripts in the college library, isn't it? Come along, Major. We'll be getting back."

"I suppose," said Major Kent, when they reached the pier, "that there wouldn't be any use in my asking for an explanation of that performance?"

"I told you before I started," said Meldon, "that I was going to offer you ocular and oral demonstration that those fellows mean to track us, and won't let us stir in the direction of the cliffs without them. Now you've got it. I hope you're convinced."

"Couldn't you have done it without that bottle foolery?"

"Well, I might. To tell you the truth Major, the bottle incident was not part of my original plan. It's what I call a brilliant improvisation. It came on me like a flash when I saw that plump baby of Mrs. O'Flaherty's, and thought how the poor little beggar had never been vaccinated. It developed in my mind when she began talking about her mother-in-law. After that the thing simply worked itself out, and worked well. I don't take any credit for it, not the least. But I'm rather pleased with the results. In the first place I've convinced Sir Giles that I'm a perfect fool."

"He's not far out if he believes that."

"Whether he is or not, Major, remains to be seen. In the second place I've convinced you that he and Langton mean to keep a close watch on us, which was the thing I set out to do originally. I have convinced you, haven't I?"

"I think you're all mad together," said the Major. "I don't understand what's going on between you."

"You mean that you won't understand. You could, of course, if you liked."

"What do you intend to do now?"

"For the present, nothing. When the

time comes for eluding the vigilance of Sir Giles, I'll elude it. There will be difficulties, of course. Higginbotham will be a difficulty—so, very likely, will Mary Kate. In the meanwhile we'll sit down here and wait till the tide rises and makes it impossible to get at the treasure. They are watching us from the hill beyond there. I don't believe they mean to try for it themselves to-day. Now I come to think of it, they can't; for they didn't bring the rope with them. Come along, Major, we may safely go back on board."

"This," said Meldon, as he paddled the collapsible punt towards the Spindrift, "is out-and-away the best holiday I've ever had. I tell you, Major, it's fine."

"I'm glad you're enjoying yourself. Sure you wouldn't like to slip off home and take out the rest of your time with your little girl?"

"I wouldn't leave the treasure," said Meldon, "at this stage of the proceedings, not if Gladys Muriel went down on her bended knees to beg me. I wouldn't do it even if Sir Giles and Langton weren't here. Now that they have come, and added a spice of real adventure to the hunt, I wouldn't go away to marry the eldest daughter of the Emperor of Germany. I'm enjoying myself."

There was no doubt that Meldon spoke the literal truth. Excitement and pleasure beamed from his very eyes. He sent the Major to get the dinner ready while he lay on deck, and with his eye just over the low gunwale of the yacht, watched Sir Giles and Langton row back to the Aureole in their punt. He ate his dinner hurriedly, breaking in upon the meal at short intervals to mount the companion-ladder and take a look at the Aureole.

"Patience and calm," he said after one of these excursions, "are the great things after all. There's a French proverb about getting a thing in the end if you only wait quietly."

"I suppose you think you're practising these virtues now," said the Major.

"I know I am. A man with less self-control would have darted off to the cave this morning and probably had a free fight with Sir Giles, which would have ended in Higginbotham taking possession of the treasure in the name of the Government. Whereas I sit here quietly and wait for the next move on the part of the enemy."

"Oh, that's the game now, is it?"

"That's the game. Let Sir Giles show his hand and I'll deal with him."

For some time it appeared that Sir Giles also intended to play a waiting game. He and Euseby Langton sat on the deck of the Aureole and watched the Spindrift. They gazed at Meldon and the Major through binoculars when they had seen all they could with the unassisted eye. Meldon, in return, got out a pair of glasses and stared at them. The afternoon became very hot. The water of the bay lay in an unbroken sheet around the boats, and glowed a sullen reflection of the light. The Major fetched some cushions from the cabin, made himself really comfortable, and went to sleep.

(To be continued)

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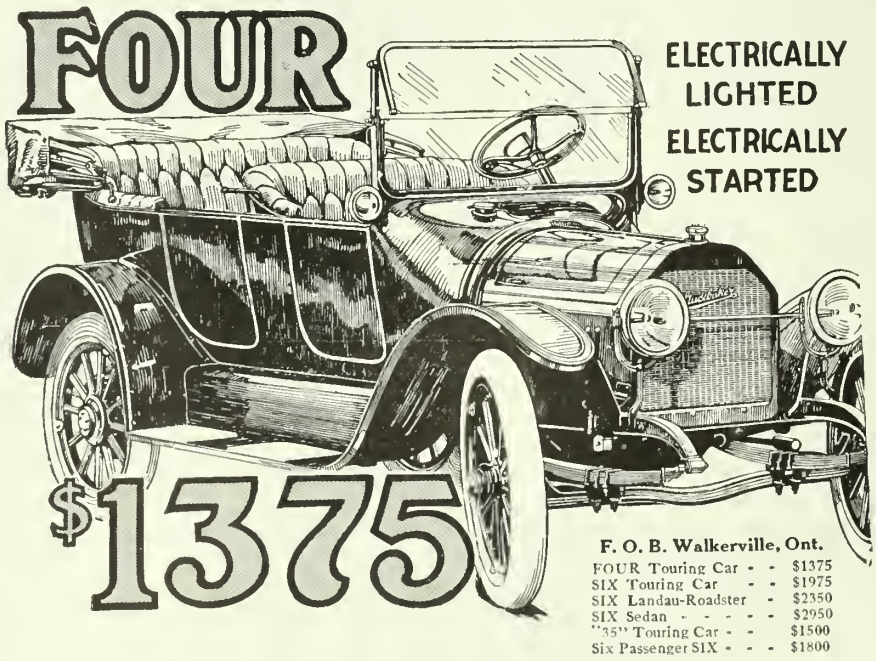

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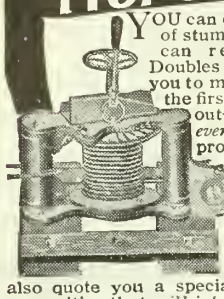

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Why Horses are Cheaper

The Horse Market in Toronto Shows a Wide Distribution of Heavy and Light Animals

By J. A. BLACK

The writer of this article has been an observer of the horse market for some time. That the farmers find the sale of horses a little slow this winter is evidenced from country auction sales where the opinions are frequently expressed that prices have been too high, and we may look for more normal values this spring. If a buyer wishes to get a good horse, yet, he will find prices sufficiently stiff.

IN NO department of trade and commerce has there been a greater change than in the marketing of horses in Toronto, and, indeed, in all Ontario, during the past fifty years. Men who are not over sixty can remember that when they were in their teens the traffic in horses in the city was carried on mainly on the general market, the public street or at the livery stable. Then as now, the place of production was chiefly the farm, and when farmers, living within easy reach of the city, had horses for sale they would bring them in, and endeavor to find buyers in the places where custom had fixed as the most likely to find them. In all cases, however, where farmers lived at a considerable distance from Toronto, they would present their animals at local fairs, and during these, exchanges frequently took place. Many were sold too at the farm residence. For when a party in an urban centre wanted a number of horses he would himself, or employ an agent to, secure them direct from their owners on the farms.

The transportation in these early days was a more serious matter than it is to-day. Railways were few and the movement was slow. Hence most of the transferring of horses from place to place was by ordinary road, on which the animals were driven, ridden or led to their destination.

In the presence of these conditions it is not to be wondered at that any market there may have been for horses in Toronto could hardly be called a "Horse Market." But now the market for the disposal of horses in Toronto has assumed immense proportions. The yearly turnover amounts to no less a sum than $4,000,000 and the number of horses handled aggregates 30,000. The market is in the hands of large sales-stables located in different parts of the city.

The supply for these is drawn mainly from all parts of Ontario. Dealers buy them from the farmers and special breeders and send them in by the carload. And farmers, desirous of eliminating the middleman from the transaction, send the horses direct to the sales-stables. At these "Repositories," as they are called by their owners, the animals are received without any guarantee being received or asked. They are fed at the stables and the cost is charged up to the owner. The commission taken by the owner of the stable is $5 per head regardless of the value of the animal. It may sell for $50 or $500 the charge is the same. This may seem very little for the maintenance of so costly an institution as the sales stable, but it should be remembered, that a fair price is charged for the shelter and feed, and that many animals are sent out weekly.

A Wide Distribution

The distribution of the animals is nearly world-wide. Some have been sent as far away as South Africa; others have gone to Europe. But the vast majority are placed on this continent. A goodly percentage go across the line to the United States, and help to do the work done by horses in urban and rural parts. Most of the animals, however, are kept in Canada. They are shipped to Alberta, Saskatchewan, British Columbia, the Yukon, and all parts of Ontario, many going to construction camps on the railways.

The buyer is safeguarded from being deceived by a written guarantee as to the condition of the animal, believed to be correct by the sales-stable management. The duration of this guarantee is twenty-four hours. Should any defect other than those which may be mentioned in the written record be discovered within this period, the animal can be returned and the purchaser will receive back all he paid. The original owner is then informed of the rejection, the causes of it, and the horse is turned over to him. A record is made in the stable office of the occurrence, and the horse is listed among the rejected.

Thus, it may be seen, that the marketing of horses is now placed on as honest a basis as any other line of legitimate business. And it is this same feature, which perhaps, more than all others combined, has contributed to the success of the present horse market in this city. For anything like fairness in a horse deal was a rarity anywhere, and even now cannot always be relied upon when the deal takes place beyond the

precincts of the sales stable. Some owners will credit the animal with merits to which it is a stranger, while others will simply hide defects, thinking they are not required in ethics to give information that will either prevent a sale or, in case of a sale, will decrease the value of the animal. David Harum's celebrated horse sale to the deacon in which there was a lack of evidence that the buyer got decidedly the worst of the bargain, is not to be regarded as simply a product of the imagination, neither as a matter of ancient history.

Sharp Practice

And this "sharp practice" in a horse deal is not always limited to those who are strangers to each other. It occurs frequently among friends and neighbors. Hence little, if any importance, has come to be attached to what an owner of a horse said or didn't say of him in a sale. Therefore, when it is known that something like certainty regarding a horse can be had in the horse market, those in need of these animals come to the market and buy in preference to purchasing near home, and thereby incur a serious risk of being taken in by the sellers.

Since the rise of the horse market, the change in the weight and type of horses placed on the market has been most marked. Forty years ago the great bulk of the horses raised in this country were trotting-bred animals, whose weight was from 900 to 1,200 pounds. A horse reaching the latter figure was considered sufficiently heavy to be put to work drawing a big truck, or to serve in a contract. But gradually a heavy type of horse was introduced. The originals came from Scotland, and later some were imported from France. These once at work where great muscular strength is requisite, soon demonstrated their serviceableness over the lighter breeds and created a large demand for their kind when heavy work was to be done. With the demand came increased prices, and a widespread effort to supply the market. The efforts of the producers of the heavy draft breeds have been such that for some time only big horses weighing 1,600 pounds and over are found in front of heavy loads on the streets, in railroad construction camps, canal excavations, lumbering operations and out on the prairie breaking up the tough grass whose roots have become matted in the growth of centuries.

Light Horses Needed Yet

Yet the light type of horse has not been wholly banished from the market. There is still a demand for such as light roadsters and where light work is to be done. And this is still the character of much of the work on city streets. In the delivery of goods from the shops of retail merchants to the consumer the light weight horse is the most service-

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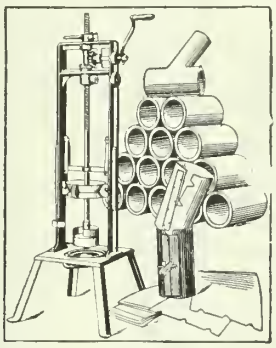
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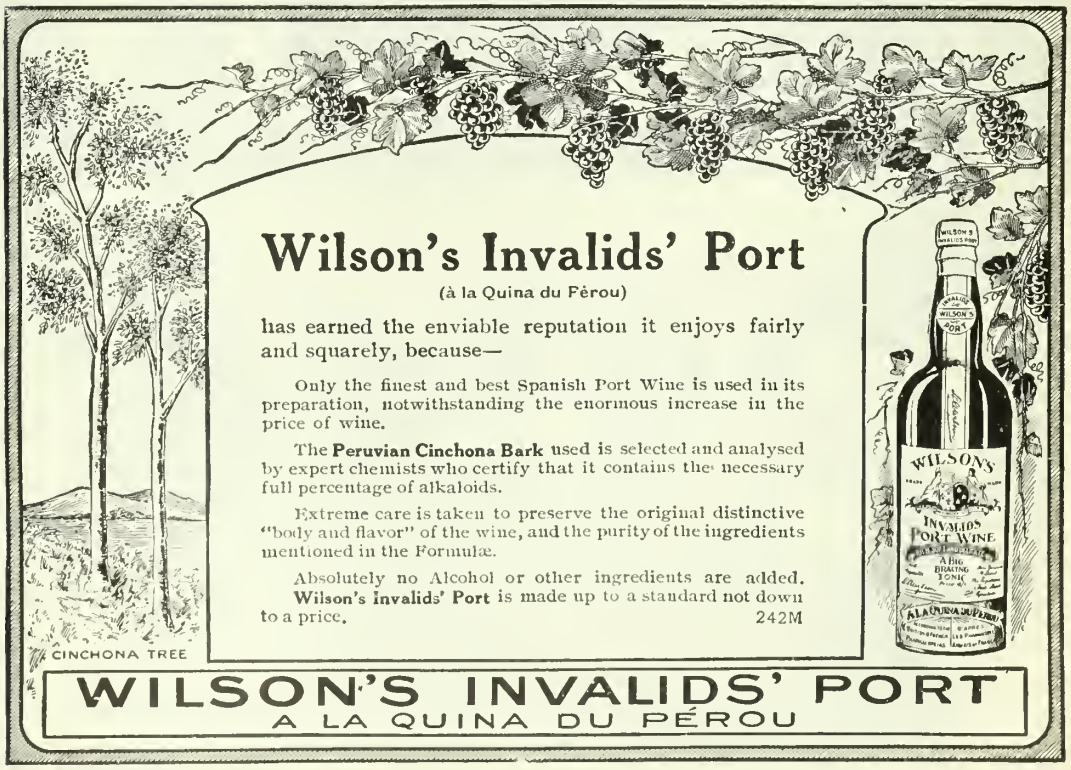

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72

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able, and retains his popularity. Many farmers in the East and West, who utilize the heavy breeds in the fields, keep one or more horses adapted to free, rapid movement on the public roadway. And there are in urban centres a proportion of the people who retain the old-time preference to be drawn by a trotting horse, rather than to be moved in a vehicle propelled by mechanical power. This being the case for the light breeds there is a constant demand for animals of this type, and horse market management keep this in view. For in their stables may be found light animals standing side by side with the heavy breeds.

Up to about eight months ago, there had been for ten years a steady advance in the prices. Horses which a decade since sold for $200 each, brought $250, and those of the value of $250, realized $300 and $325. Since last spring, however, there has been a marked decline in values. This decrease is estimated at from 25 to 30 per cent.

This lessening in value has resulted from a lessened demand, and this again is due in part to the application of mechanical power in the movement of vehicles such as the automobile, and the auto-cycle. But the main factor in the lowering of price, so far as the heavy draft animals are concerned, arises from an economical condition in north-western agriculture. The farmers there have been paying big prices for the mammoth horses. Six hundred dollars was a common price to give for a team. And as much as $850 have been paid. The use of these on the farm was to produce wheat, this being so far the main crop, and on most farms the exclusive crop. The labor of these animals produced a certain number of bushels of wheat, having a definite marketable value. Now in estimating the cost of production, the cost of the motive power, which, in this case, was the muscular strength of the horses exerted in drawing, was ascertainable. And it has been found that beyond a certain fixed price, which cannot exceed $600, or $650 horses cannot be used profitably in the growing of wheat at 80 cents per bushel, the maximum price at most points in the West for several years, and is so still. Therefore, until one of two results is obtained, that is, either the production of more wheat per acre, or there is an advance on present prices, the price paid for horses to cultivate Western land must be lower than the ruling price for the past decade. This, as an economical principle in agriculture, has been realized by some Western farmers, and must be by all who exercise their mental faculties in their business, and will hence govern in the future the Western market for farm horses.

The Month with the Housekeeper

By GENEVIEVE

THE HOUSEKEEPER, who begins early to do the little odd jobs, like sorting through drawers and cleaning cabinets and cupboards will have less confusion when the real spring cleaning campaign seizes the house.

Have a good supply of cloths, brushes, cleaning materials and polishes on hand, and consider well what you have to get new in the way of curtains, linoleum, etc. Remember that an inlaid linoleum, while it costs more in the beginning it keeps its pattern until it is actually worn through. A preservative like Linoshine put on and let dry over night, prolongs the life of any linoleum.

This is a good time to agitate the co-operative buying of a vacuum cleaner by members of your local women's institute. It is better, of course, to have one of your own, but the co-operative plan has worked very satisfactorily in a great many neighborhoods.

You will no doubt have some trouble with white watermarks on varnished furniture. These come off easily if rubbed first with alcohol or methylated spirits, then with linseed oil. A good home-made furniture polish that can be safely used on any polished surface is made as follows: Take 8 oz. unboiled linseed oil; ½ pt. vinegar, ½ oz. wood alcohol, ½ oz. butter of antimony, ½ oz. muriatic acid; put all together and mix by shaking well.

The Old Braided Mat

In going through your chests and clothes-presses you will likely find some old clothing that our grandmothers would have torn into strips and sewed together for carpet rags. While the rag carpet is no longer popular on account of the way it lets dust through and holds it, the old-time braided mats are coming into fashion again, and a very pretty air they give to a bare-floored bedroom or sitting room or kitchen. Perhaps you don't approve of rugs in a kitchen, but if these braided mats are made thin and flexible enough to be scrubbed on the washboard, they may be kept fresh and clean, and placed where you do much walking or standing they make a more easy, yielding surface than the bare floor.

At no time of the year will you find it more difficult to plan a variety in the bill-of-fare, than just now when everything seems to be out of season. The demand for fuel foods, is lessening and fruit and vegetables should be used unsparingly. The old custom of dosing the household with sulphur, cream-o'-tartar and molasses, is happily passing; the cream-o'-tartar and molasses are harmless enough, but the sulphur is not. Instead of this, fresh stewed apples, canned fruit, and better still, stewed dried prunes, raisins and figs should be served in abundance. This is also a good time to study your cook-book for new egg recipes.

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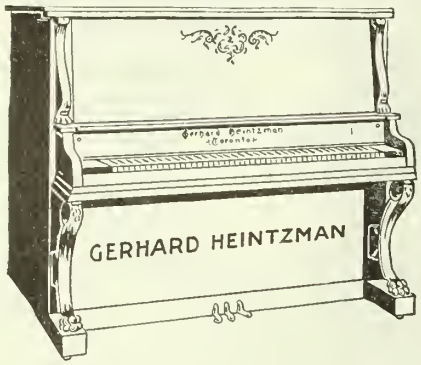

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Between Ourselves

A Drawer for Questions Concerning the Home and Family

Address your letters to "Genevieve," Farmer's Magazine, Toronto, Canada.

How to Dress Economically and Well

Q.—I am writing to ask for help with a paper I have to give at our Institute meeting. The subject is, "How to Dress Economically and Well." Would you please be so kind as to help me out?

H. E. M., Ont.

A.—In the first place I would try to make clear what it means to be well-dressed. Someone has said that to be well-dressed a woman should be dressed so that no one will notice her clothes. I would add to that, that she should try to make her clothes express her personality, to be just what she likes, not chosen because every one else is wearing the same thing.

To dress economically and well one must avoid extremes in style and color, as they are so noticeable one soon tires of them and they soon become old-fashioned. It is a good idea to choose one or two colors for a season, perhaps blue, or black and white; then by having hats, dresses, suit, and waists conform to these colors you can have variety in your costumes without having many clothes, that is the one hat will go with any dress you have and any one of your blouses will match your suit. By having a dress made to wear with separate guimpes or yokes, it can always have a fresh appearance.

A great deal of money is misspent in what we might call details. It is very important that a well-dressed woman have immaculate shoes and gloves, but the shoes need not and should not be patent leather for steady wear, nor the gloves white kid. It is impossible to keep these in good condition if you wear them much. Many of the well-dressed women in our cities feel that they cannot afford to wear kid gloves at all for every day, and the good cashmere or suede are warmer and very neat. It is also unnecessary to wear silk or fine lisle stockings, especially with high boots; cotton wears longer and is easier on the feet. Fine lingerie underwear under cloth dresses is not economical; heavier cotton costing half the money stands more wear and may be made up very prettily. White crepe is easily laundered, pretty and durable. The well-dressed woman will be as particular about her underwear as about her gowns, but it need not be expensive to be fresh and dainty. Old silk dress skirts may be mended and used for petticoats after they are past using outside.

I would emphasize the importance of being attractively dressed at home every day, as well as on company occasions. I enclose a clipping, "The Charm of the Simple House Dress" to help you with this.

The other article, "The Skyscraper Woman," clipped from MacLean's

Magazine will, I think, give color to your paper, just now when people are interested in the new spring styles, but don't forget to add that however extreme or even hideous the fashion may become, there are always many pretty styles that are charming without being out of date. Women should be independent enough to wear what is graceful and becoming and modest and comfortable no matter what fashion dictates.

I hope this material may give you the help you want.

Spring Housecleaning

Q.—I have to give a paper on spring housecleaning at our Institute meeting. If you would give me a few suggestions on preparing the paper, I would be very thankful. It is a subject that every one knows, and I find it difficult to say anything of real value.

Mrs. G. E. R., Ont.

A.—It is a fortunate audience that has a speaker whose anxiety is all to "say something of real value." We hope the outlines for filling in with your own ideas, and the clippings will be of some help.

Our February House Plan

Q.—Is it possible to obtain the elevation and plans of the farm house described on page 34 of your February issue? I take the left side of the plan as the front and the "library" is the entrance hall. I cannot see that the interior picture of the living room belongs to the plan. If it does, it has a strange treatment in the walls and ceiling. It seems to be octagonal in the picture. This plan has no office for a business farmer. It should have.

H. R., Alta.

A.—We have not blue prints for our farm houses, just the floor plans appearing in the illustrations. The left side of the plan is the front, as you understand it, and the front door opens into the library. As the front door in the majority of farm homes is not used enough to make the room subject to frequent interruptions by visitors, its purpose would not be just the same as that of the ordinary entrance hall. You will notice in reading the article that it is intended to serve as an office, regarding the importance of which I heartily agree with you. The interior picture of the living room on page 33 does not belong to the plan. It is featured only to illustrate the effect of mission furniture and paneling. I believe you will find the plans in this (April) issue more like what you want. The house is larger, 32 ft. x 40 ft., with a fireplace and attic, and the layout is also given for the basement. The office here opens from a short hall giving more privacy.

What Would You Do for Croup?

Q.—What is an efficient, reliable treatment for a bad case of croup?

J. A., Ont.

A.—Put a cloth wet in cold water around the child's throat, being sure to

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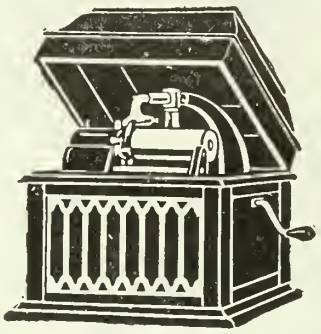
Throughout the history of sound reproduction Mr. Edison has blazed the trail.

Every important step has been conceived first in his mind. He is the acknowledged master of acoustics throughout the world. His recent triumph is the



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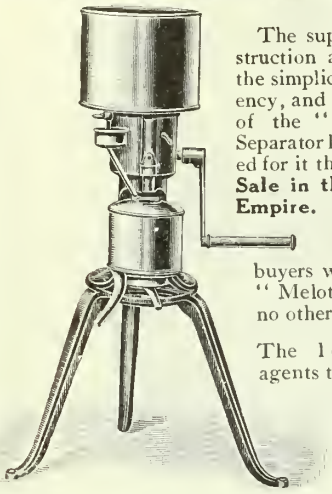

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SEPARATORS

see that he is kept comfortably warm. Then, if necessary, give moist inhalations of compound benzoine. The best way to do this is to dissolve one teaspoon of the compound in a pint of water, heat to boiling and when the steam is coming well from the spout of the kettle, hold the child over it. Bring a blanket up over his head and cover it over the kettle, that the vapor may be confined and inhaled freely. I have this advice from a doctor.

There are emergencies, of course, where the only resource is to curve the finger down into the throat and remove the mucus, but this only gives temporary relief.

Modern Ways With Dairy Products

(Continued from page 32.)

(e) It shall have undergone no pasteurization or sterilization, and be free from chemical preservatives;

(f) It shall be cooled to 45 degrees Fahrenheit or under within half an hour after making, and kept at that temperature until delivered to the consumer;

(g) It shall contain twelve to thirteen per cent. of milk solids, of which at least three and one-half per cent. is butter fat;

(h) It shall be from a farm the herd of which is inspected monthly by the veterinarian, and the employees of which are examined monthly by a physician.

Provided that no milk shall be sold as certified until a certificate setting forth that the above conditions have been complied with is obtained from time to time from the Medical Health Officers of the Municipality in which it is to be consumed or from an incorporated society of Medical practitioners."

It will be seen from the foregoing regulations that "certified" milk is, or should be, of excellent and safe quality, yet some of the leading authorities do not agree with clause (e), which prevents pasteurization of such milk. In the opinion of these men, it is safer to pasteurize even so high-grade milk as that of certified, in order to lessen the danger of disease germs in the milk.

The Paper Milk Bottle

The chief dangers from disease are in impure water on the farm for cows and for washing utensils, and improper sterilization of the bottles, measures, or cans after exposure to contamination on the farm or in the city where the milk is consumed. For this reason, leading dairymen are advocating the use of a "mono-service" milk bottle made of sterilized paper pulp. After once using, the bottle is destroyed. Except for the expense, this is an ideal package for milk and cream delivery—no washing or breaking of bottles, no losses by consumers using bottles for pickles and preserves. The load of milk bottles is reduced to one-sixteenth that of glass by using paper bottles. We cannot understand why Canadian manufacturers seem unwilling to take up the manufacture of single-service bottles, which we have tried to get them to do. We have a great many inquiries from milkmen and dealers about these bottles. The market is almost unlimited for a satisfactory mono-service milk bottle which can be sold at a reasonable price. On general

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"GILT EDGE." The only ladies' shoe dressing that positively contains **Oil.** Blacks and Polishes Ladies' and Children's boots and shoes, **shines without rubbing, 25c. "FRENCH GLOSS," 10c.**

"ELITE" combination for gentlemen who take pride in having their shoes look A1. Restores color and lustre to all black shoes. Polish with a brush or cloth, 25c. **"BABY ELITE"** size, 10c.

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principles we should say that the package ought not to cost more than one-tenth of the price for which the goods are sold. For instance, if milk sells for 10 cents per quart, the package or container should cost a correspondingly lower price than if the goods sell for 25 to 30 cents. An American dairyman is quoted as saying: "It costs me five-eighths of a cent for every quart of milk sold to keep up my stock of bottles." This brings up the whole question of delivery costs.

Cost of Delivering Milk

The cost of milk delivery must be lessened by some means. An American firm figures that it costs them 4.4 cents to deliver a quart of milk, to which must be added .37 cent per quart for shrinkage. The average price paid to producers for one year by this same firm was 3.9 cents per quart. We thus have the astonishing statement that it costs more to deliver a quart of milk than is paid to the producer.

It is unquestionably an unbearable condition which allows that the man who invests money in a farm, buildings, and live-stock; feeds, milks, and cares for cows and milk, is entitled to less than one-half what the consumer pays for milk.

No wonder boys leave the farm to see if they cannot find the other half of the consumer's dollar which never reaches the producer. It ought not, and should not, cost over 10 to 25 per cent. of the ultimate selling price of milk, or any other farm product for that matter, to take the milk or other produce from the farm to the consumer, and some way must be devised to lessen the present distribution cost, which is absurdly out of proportion to production cost and selling price.

Possible Savings

We are free to confess that we never ran, or attempted to run, a milk business; but as an onlooker and student of dairy problems, it would seem as if savings in cost of distributing milk might be effected in the following ways:—

(1) Reduce the waste of milk in handling. The writer was told the following incident recently with reference to a certain milk plant in a certain city. One of the men was filling cans from a large faucet and instead of shutting off the faucet as one can replaced another, the milk was allowed to run continuously, thus wasting milk, rather than take the trouble to close and open the tap as a full can was removed and an empty one substituted. At least a pint of milk was wasted every time a change of cans was made. This continued throughout the year would amount to a considerable amount of money. Wastes of by-products, such as skim-milk and buttermilk are very common in dairy plants. These ought all to be utilized in some form as human or animal food, and not be allowed to run into the sewer.

(2) Lessen the waste of human and horse energy by having one delivery instead of several milk deliveries on the same street. In a small city we have known five or six milk wagons to deliver milk on the same street. Some means should be adopted whereby this expense could be materially reduced. The city or town should be divided into districts and each man or company have a certain district or districts, all under proper supervision by the Health or Police Department. This may be somewhat difficult to put into actual practice but some system is necessary in order to reduce the expense of delivery, which is altogether too great under present conditions. "Daylight delivery" should also be the rule.

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$60 A WEEK and Expenses

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That's what you should get—every month. Needed in every home, badly wanted, eagerly bought. Modern bathing facilities for all the people. Take the orders right and left. Quick sales, immense profits. Look at these men. Smith, Ohio, got 18 orders first week; Meyers, Wis., $250 profit first month; Newton, California, $60 in three days. You should do as well. 2 SALES A DAY MEANS $300 A MONTH. The work is very easy, pleasant, permanent, fascinating. It means a business of your own.

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Little capital needed. I grant credit—Help you out — Back you up — Don't doubt — Don't hesitate—Don't hold back—You cannot lose. My other men are building houses, bank accounts, so can you. Act then quick. SEND NO MONEY. Just name on penny post card for free tub offer. Hustle!

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THEN LISTEN! You can have it if you will put your name and address on a postal card today and mail it to us at once. We will put you in your own, quick-paying business where you will make $5 to $20 a day. You can do it just the same as our other men. Here are some late reports: Cable, of Wyo., writes: **"Made $27.00 in 2 hours."** Bryant, of Colo., made $16.00 in 6 hours. Evans of Miss., says: **"Made $15.75 last Tuesday."** Perry, of Ky., **"Made $50.00 in 2 days."** Hundreds of actual, bona fide letters like these on file.

Now is your chance to get out of the "time clock" line and the "pay envelope" brigade. **Be a one minute photographer.** New business—tremendous opportunities—the world for your field—travel or at home—all or spare time—big, quick, clean profits at private houses, parties, picnics, on the street, in the small towns, in great cities, at fairs, carnivals, conventions, reunions, street parades, aviation meets, etc., etc.,—NO EXPERIENCE NEEDED—Profits begin at once—first day—first minute—and you Make 500% on Every Sale. Don't delay —don't wait—act—write at once for complete free information about

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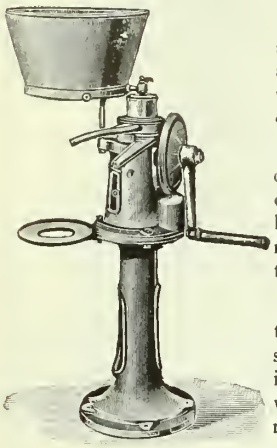

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(3) Reduce the losses from bad debts, bottle breakages and thefts, etc., by co-operative effort on the part of dealers, through a central Bureau or Exchauge, whereby all such cases would be dealt with in an effectual manner. Under present conditions the milk dealer is largely at the mercy of dishonest purchasers, who refuse to pay for milk, or who move to another part of the city or to another towu, leaving the milkmau in the lurch. While cash purchases are the rule, it is not always possible to euforce the rule. It is very difficult in some cases to prevent stealing of milk bottles or to exact payment in case of breakage.

(4) The transportation charges from the farm to the place of distribution should be reduced to the lowest point by the use of special milk cans or trains, and losses by souring during transit should be minimized by using iced cars for transportation.

The transportation companies of Canada do not seem to have given the question of milk and cream carriage that attention which its importance would warrant, especially when we consider that milk is so largely used by children and invalids. Delays in milk and cream deliveries are quite common.

Then, too, the prompt return of empty cans is almost impossible to obtain. Many a man has had his patience nearly exhausted by failure to return empties promptly, and quite so when he finds his cans thrown off moving cars against fences, in the road, or anywhere it is convenient to throw the cans. This not only damages the cans, but makes them very difficult to keep clean and bright as cans should be for delivery of milk and cream. Railway employees are grossly negligent on these points.

Sweet Cream and Ice Cream Trade

Cream is to a certain extent a luxury; but medical men are now recommending cream instead of cod-liver oil and similar preparations for those who require that their systems shall be built up quickly. Cream from a separator, especially after being pasteurized, is a very safe food, because the centrifugal force of the cream separator removes dirt, slime, and bacteria that may be present. Pasteurization destroys pathogenic organisms.

The very finely divided fat globules in cream constitute a form of fat very easily digested, if not taken in too large quantities at one time.

"Devonshire" or "scalded" cream, made by heating the cream to 160 deg. to 170 deg. after it is risen on shallow pans, then cooling and allowing to stand for 24 hours before removal of the cream from the milk, is an old form of modern pasteurization, and gives a special flavor to cream and butter very much prized by some people.

Canadians Eat $2,500,000 Ice Cream

The newest development on a large scale of the cream trade is that of ice-cream manufacture. It is estimated that Canadians consume 2½ million dollars worth of ice-cream annually, and consumption is increasing at a very rapid rate. A great variety of dishes in the form of frozen milk and cream products is now asked for at restaurants, ice-cream parlors, etc., in all large centres of population. These frozen dairy products are easily made, and the profit is large. At ordinary creamery prices for milk-fat, the fat of cream made into ice-cream will give returns about twice as

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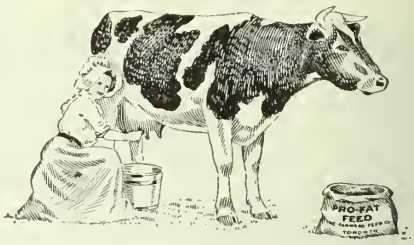

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Write for sample and booklet, which will give you still more information and show you how to increase your dairy profits.

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great as if made into butter. The supply of ice-cream for town and city trade, as well as to patrons or farmers, is becoming a profitable "side line" in creameries. In every town of 2,000 or more inhabitants there is a good business for a creamery, supplying not only butter, but also buttermilk, sweet cream, and ice-cream. The ice-cream habit is growing, and creamerymen should add this to their regular lines of manufacture, thus increasing their own profits and the price which they are able to pay farmers for their cream.

The following are a few recipes for ice-cream manufacture that have been tried at the Dairy, O.A.C., with good results:—

2 galls. cream, testing 18 to 22% fat.
4 lbs. granulated sugar.
2 ozs. vanilla.
Will make about
4 galls. ice-cream.

½ gall., 18 to 22% cream.
1 lb. sugar.
½ pint crushed fruit.
Will make one gall. fruit ice-cream.

½ gall., 18 to 22% cream.
1¼ lbs. sugar.
2½ ozs. bitter chocolate.
½ oz. vanilla.
Will make one gall. chocolate ice-cream.

In all cases, ¼ to ½ ounce of gelatin may be added to give body to the ice-cream. Various "fillers" and "binders" are used, but these do not as a rule aid in smoothness of product, and are not used in making the best quality of ice-creams.

The Government standards for ice-cream are—14 per cent. fat for plain ice-cream and 12 per cent. for nut and fruit ice-creams. It is doubtful if the commercial ice-cream products reach the Government standards; but since no one, apparently, is charged with the enforcement of these standards, manufacturers may place on the market whatever seems to them to be good enough to please the tastes of customers.

Condensed and Powder Milk Manufacture

This is a comparatively new phase of the dairy business in Ontario. There are now several large factories in the province which manufacture condensed milk, evaporated milk, whole milk powder, and skim-milk powder.

As a rule, these factories are of excellent construction, are kept scrupulously clean, are well managed, and on the whole have been a decided acquisition to the dairy industry of the province. They have set a good example for all our cheese and creamery managers in that they refuse to accept any milk which is not of good quality, as they know the finished product will be spoiled if they are not careful to accept good raw material. Owing to the fact that entrance to these factories by other than em-

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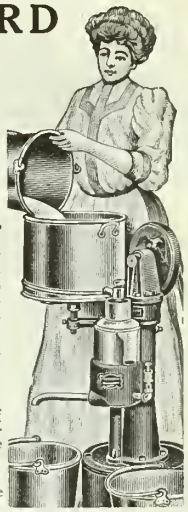
AMERICAN CREAM SEPARATOR



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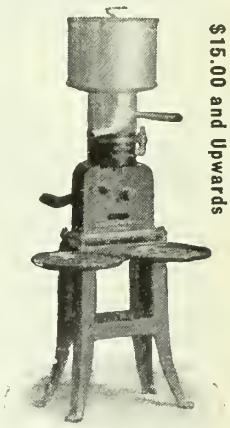

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We send you a machine on Free Trial anywhere in Ontario or Eastern Canada, and prepay the freight.

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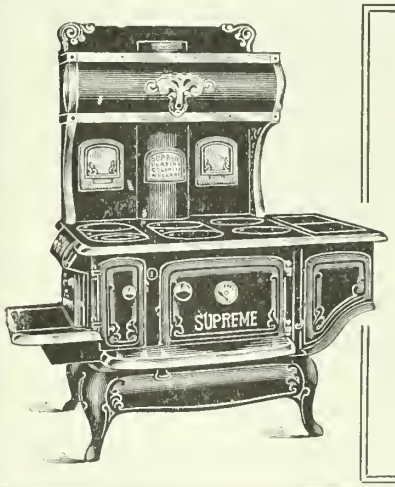

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FRUIT FARMING in the NIAGARA DISTRICT will make you WEALTHY AND INDEPENDENT in a few years. Why not investigate the OPPORTUNITIES the Niagara District, "THE GARDEN OF CANADA," offers **YOU?**

READY-MADE FRUIT FARMS or those in the making are NOT high in price when compared with the incomes derived therefrom. THE NIAGARA FRUIT BELT offers you more opportunities and advantages than any other part of Canada.

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We can also sell you any desired acreage of FRUIT and GARDEN land, planted or unplanted and with or without buildings at St. Catharines, Vineland, Port Dalhousie, McNab, Niagara-on-the-Lake, Stamford and Niagara Falls. In nearly all cases these are adjacent to Towns and Trolley lines and accessible to the highest-priced markets.

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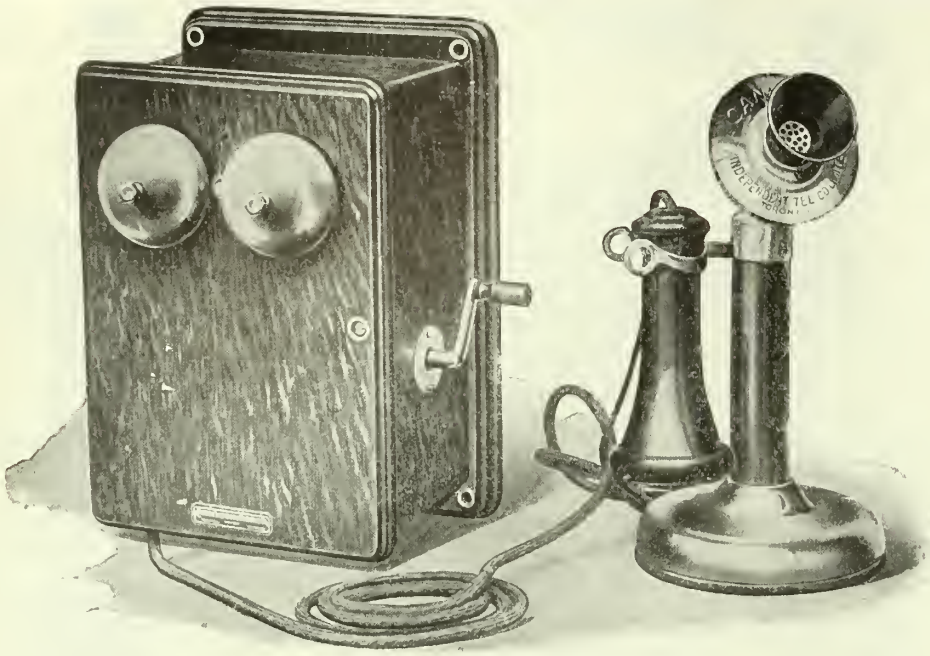

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Write for our No. 3 Bulletin, which gives full particulars about the latest methods of building telephone lines. A copy will be mailed to you free on request. We also send you No. 4 Bulletin, which gives an illustrated description of our magneto telephones if you are interested.

If there is no telephone system in your locality, there certainly should be. Your locality surely shouldn't lag behind others which are enjoying the business and social benefits of up-to-date telephone service.

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First Principles of Soil Fertility

By ALBERT VIVIAN

There is no subject of more vital importance to the farmer than that of the best method of maintaining the fertility of the soil. The very evident decrease in the fertility of those soils which have been under cultivation for a number of years, combined with the increased competition and the advanced price of labor, have convinced the intelligent farmer that the agriculture of the future must be based upon more rational practices than those which have been followed in the past. Professor Vivian's experience as a teacher in the short winter courses has admirably fitted him to present this matter in a popular style. In this little book he has given the gist of the subject in plain language, practically devoid of technical and scientific terms. It is pre-eminently a "First Book" and will be found especially valuable to those who desire an introduction to the subject, and who intend to do subsequent reading. Illustrated. 5 x 7 inches. 265 pages. Cloth. Net, $1.

The MacLean Publishing Co., 143-149 University Ave., Toronto

ployees is prohibited, it is not easy to gain information as to methods followed.

However, we do know that they utilize all of the solids of milk, hence are able to pay a higher price for milk than can be paid at a creamery or cheesery, as the former uses only about one-third to one-quarter of the milk solids, and the latter about one-half. The ordinary condensed milk contains about 40 per cent. cane sugar. This also adds to the profits of manufacturing milk. The Government standards are 28 per cent. milk solids and not less than 7.7 per cent. fat for condensed milk; 26 per cent. milk solids and not less than 7.2 per cent. milk fat for evaporated milk.

Milk powder must contain not less than 95 per cent. milk solids and not less than 26 per cent. milk fat. Skim-milk powder must contain not less than 95 per cent. milk solids.

The chief drawback to the milk condenser is the fact that there is no by-product to be returned to the farm for the feeding of live-stock, hence we find a number of dairy farmers who specialize in pure-bred stock shipping their cream to creameries, or for city trade, from the condenser districts, in order that they may have the skim-milk on the farm for live-stock.

Creamery Industry

We have but small space left to deal with the revival of the creamery industry in Ontario. The creameries which struggled along in the cheese, or Second Era, led a half-dead, half-alive existence. For some reason or other the creamery business did not seem to thrive for a number of years. So long as farmers set their milk in pans or cans, the cream as a rule was not delivered in good condition to the creamery, and the labor involved was too great for a profitable business. During this time also live-stock was comparatively cheap, hence by-products could not be utilized to advantage.

The winter creamery at the cheese factory, and the introduction of hand cream separators on the farms, may be regarded as the two chief things which gave the manufacture of butter a start on the right road. An outlet for our surplus butter was found in the markets of Great Britain at a fair price. Our home market for butter also increased at a rapid rate. Live-stock began to boom. All these things caused our creamerymen and patrons to take fresh heart, and the business received an impetus that nothing can stop.

Two Forms of Creameries

The farmers of Ontario have settled the question of the form of creamery which they consider best by supporting the cream-gathering creamery and withdrawing their patronage from the whole milk creamery. The chief reasons for this change are:—Less cost for hauling milk to the creamery and for returning the skim-milk to the farm, and a better quality of skim-milk on the farm, where the milk is separated immediately after milking and fed to live-stock while sweet and warm.

While the system of collecting cream

only from the farm results in more labor on the farm, and also in a poorer average quality of butter as compared with the whole milk plan, our farmers do not seem to mind the extra labor, and they look to the buttermaker to turn out a first-class finished product regardless of the quality of the raw material, cream, which is furnished to him. The experience of every country is the same—a change from milk collecting to cream collecting results in a poorer finished product, butter. Denmark tried collecting the cream for a time in a few creameries, but quickly discarded it and went back to the whole milk system, as they found that the quality of their butter deteriorated under the change of systems. In Denmark, owing to the restricted areas, large cow population, and comparatively good roads, they can carry on the whole milk system of operating creameries to better advantage than we can in Canada, with our wider areas, small cow population per acre, and bad roads; but we think that the milk plan is the plan best suited for making the highest grade of butter, and is that plan which our best creamery sections will finally adopt and which will pay best in the long run.

Under the present system of collecting cream from the farms, it would seem advisable, in order to improve the quality of Canadian creamery butter, to give special attention to the following points:

(1) Keeping everything clean which comes in contact with the milk, and in no case follow the plan of washing the cream separator but once a day. The separator must also be in a clean place—not in a cow stable, or any other place where it and its surroundings cannot be kept clean.

(2) The cream should be cooled to 50 deg. as soon as possible after separating, and before mixing with lots of previously separated cream. To do this means that creamery patrons must have a plentiful supply of ice—not less than one ton of ice per cow—two or three tons per cow would be better.

(3) Delivery of cream in individual cans and in a sweet condition to the creamery, not less than twice a week—three times a week would be better in hot weather.

(4) Pasteurization of the cream on delivery at the creamery and ripening after cooling, with a pure lactic culture.

(5) Grading of the cream—paying a lower price for the poorer quality, or a higher price for all cream of A1 grade, which should be sweet, clean in flavor, and test 25 to 35 per cent. fat.

(6) Skilful manufacturing of the butter in well-equipped factories, and preparation for market in packages to suit the trade, or market for which the creamery caters.

(7) Reduction of cost of manufacture and selling to the lowest point possible, consistent with good quality in order that patrons of creameries may receive the highest price possible for their milk fat or cream.

Casein Manufacture

As a "side line," some of our whole milk creameries have been making casein, which is used in the coating of the finer quality of papers used in magazines and books that use illustrations largely. But the price received for the raw casein has not been such as to warrant any great extension of the business—in fact, it seems to be on the decline, as the skim-milk is worth as much more for feeding purposes as can be got for the manufactured casein. A new method of precipitating casein by electrolysis has, it is claimed, been recently perfected in France, whereby the cost of manufacture is considerably lessened. This may cause a revival of the casein industry in

MANITOBA

BEST POSSIBLE LOCATION FOR YOUR FARM OUT WEST

In size, yield, succulence and flavor there are no finer vegetables in the world than those which the rich Manitoba soil produces. The black loam of Manitoba is an ideal garden soil, and growing conditions are phenomenal.

One market gardener near Winnipeg produced $350 worth of pickling onions on half an acre. Another received $547.40 from a half-acre of cabbages—land without fertilizer for 17 years.

So great is the market demand that Winnipeg alone, it is estimated, sends out $20,000 per day for garden stuff over and above local supply. Hundreds of thousands of pounds of onions are annually imported from United States, Australia and Egypt; carrots from California, etc. Manitoba's need is great for all Mixed Farming products.

ALTHOUGH grain-growing has given Manitoba her agricultural pre-eminence in the eyes of the world, the province is known as the very Home of Mixed Farming because of its natural conditions and tremendous market advantages. The Manitoba farmer works not merely for a living, but rather for a good big profit.

Nowhere in the world can foods for stock be grown more successfully than in Manitoba, while a clamoring market points unwaveringly to substantial profits.

Customs returns show that during the year ending March 31st, 1913, Manitoba imported 1,596,480 dozen eggs, valued at $314,121. It took 54 cars to bring in the dressed poultry required over and above all local supply, representing a value of about $243,000. Approximately 2,000,000 lbs. of butter were received at Winnipeg from the United States and Eastern Canada during 1912, a value of $560,000, while Winnipeg creamery companies bought $120,000 worth of milk and cream from two Minnesota cities alone. The customs receipts for imported bacon and hams amounted to nearly 5,000,000 lbs., worth $573,569. Tomatoes came in cans at the rate of 228,292 lbs., while 18,722 bushels of potatoes were brought into the province, together with other kinds of vegetables to the value of $76,233.

Add these totals together and you have nearly two million dollars, waiting for somebody to come and pick them out of the rich Manitoba soil. Plenty of it available.

There is scarcely an item in the long list of food needs which cannot be produced by the Manitoba farmer, superior in quality to any of the importations which at present represent the huge difference between demand and total local supply. Only about one-quarter of the 25½ million acres of land surveyed in Manitoba was under crop this year. It will be seen at once, therefore, that Manitoba's great need is men to go on the land, and that this need is the newcomer's money-making opportunity.

Why not let us help you to cash in on it? Why not WRITE at once for literature and full information? There are so many sound, common-sense business reasons why you should choose MANITOBA as the location for your Canadian home that to go elsewhere before investigating this Market-Centre Province is to deal unfairly with yourself and your family.

WRITE:

JAS. HARTNEY, Manitoba Government Office, 77 York St., Toronto, or direct to

HON. GEORGE LAWRENCE

Minister of Agriculture and Immigration

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No waste. Nothing to get out of order. Ask your dealer.

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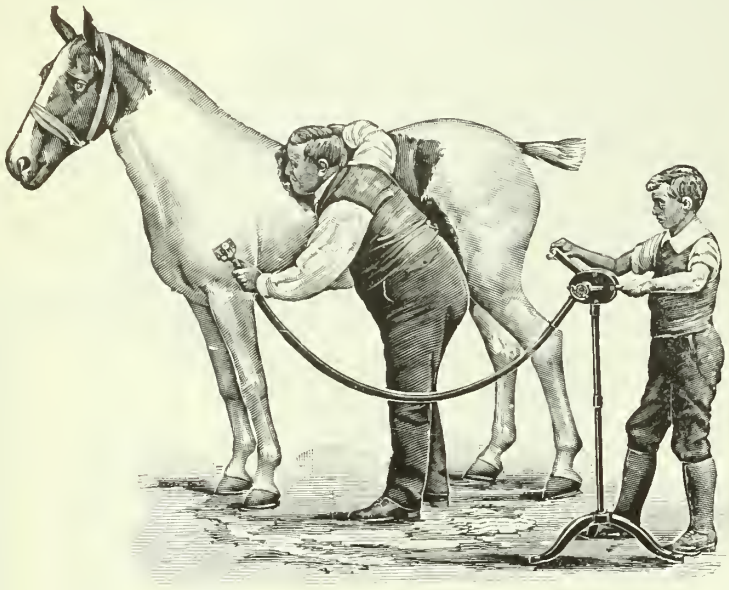
IS THE MOST POPULAR CLIPPER MADE



Has cut gears and interchangeable parts.

All horse owners should know this clipper, as it is the best.

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Sole Agents for Canada:
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MONTREAL, QUE.

INTERNATIONAL STOCK FOOD

keeps horses, cows, sheep and pigs in such prime condition, because it is composed of the same herbs, roots, seeds and barks that these animals eat freely when ruuning wild. We grind these ten medicinal substances to a fine powder, mix them thoroughly and give them to you, at their best, in International Stock Food.

This is why a tablespoonful of International Stock Food with the regular grain feed tones up the system of horses, gives them new life, and a glossy coat of hair. It is the best thing you can give a horse for indigestion, liver trouble, coughs, influenza, hide bound or blood trouble. International Stock Food is equally good for horses, cattle, sheep and hogs. It keeps the system in a healthy condition and promotes rapid growth. For sale by dealers everywhere. 111

INTERNATIONAL STOCK FOOD CO. LIMITED, TORONTO, Ont., Can.

Canada, but at present it is in a somewhat languishing condition.

Is a "side-line" in connection with our cheeseries. The sweet whey is run through a power separator, producing a cream very rich in fat (40 to 50 per cent.). This is then ripened with a pure culture, churned, and a fair quality of butter is produced.

It is claimed by some cheese manufacturers that the whey butter is the only source of profit in making cheese in certain cases. So long as it is sold for what it is, no great objection can be taken to whey butter. The feeding value of the whey for pigs is increased by 25 to 33 per cent. by not separating the fat or cream, according to tests made at the O.A. College. This is a point to consider when deciding on the manufacture of whey butter at a cheese factory. There is also considerable expense for installing machinery, but operating expenses are comparatively low.

The Outlook

With all these diversified forms of dairy manufacture at present, in addition to the excellent markets for sweet milk and cream in Canada and the United States, since the tearing down of the tariff wall, our dairy farmers have great reason to be hopeful of the future. If they can devise some means of getting a larger share of the price paid by the consumer for dairy products, there is no reason why dairy farming should not continue to occupy a leading place, as it has done in the past, in the agricultural production of the province of Ontario, and for the whole of the Dominion of Canada.

Better cows, cheaper feed, improved quality, wider markets, higher prices, these are the watchwords of the future in Canadian dairying.

Courtship Incog

(Continued from page 29.)

Terris' breath away. On glancing up, Ida's surprise equaled his own, but for a far different reason. She cut short her father's introductions by tumultuously crossing the room.

"John," she said, with a world of welcome in her eyes, "I am so glad. But why—"

Mr. Randolph stood rooted to the ground in sheer amazement as the two young people exchanged a form of greeting quite common and proper for engaged couples, but decidedly unusual when practised prior to a formal introduction.

"Ida!" exclaimed Mrs. Randolph, apparently convinced that her daughter had become suddenly bereft of her senses.

"Terris!" declared Mr. Randolph. "What in thunder—"

"Terris!" repeated the girl stepping back and regarding her lover in amazement.

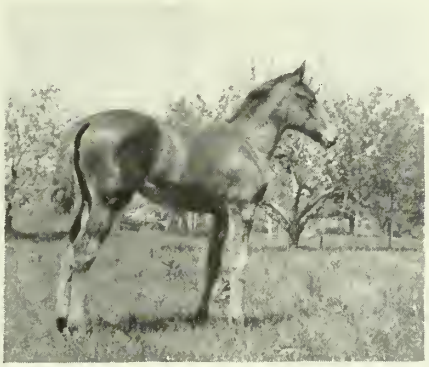
"John Robinson Terris, at your service," said John, bowing low. "I owe you all an explanation. Have you any objection, Mr. Randolph, to my making it to your daughter first alone?"

Educating the Colt

Many Horses Have Proven to be Nuisances Owing to their Imperfect Breaking

By W. H. UNDERWOOD

HALF of the value of a horse is dependent upon its education and training. This work can never be commenced too soon. The younger the colt the more easily it can be handled and the more readily it can be taught. The old adage, "Old dogs do not learn new tricks," applies with equal truth and force to colts. The youngster should be taught what is required of it in a manner that will give it confidence in man, and yet convince it that man is its master. To do this without frightening or injuring the animal requires skill, patience and good judgment, but the result well repays the trouble. When we stop to think of the large number of horses spoiled in their schooling, we can but realize that the utmost care is necessary and profitable.



A bouncing youngster in the primary class.

Colts are generally pets, and they ought to be constantly fondled and made handy. They are naturally timid, but are also very inquisitive. They use their lips and never are satisfied with any strange object until they have touched it with these sensitive and prehensile organs, which really serve them as fingers. Colts ought to be encouraged to approach people quietly and without fear, and gradually accustomed to being handled on their faces, heads, ears, and bodies. They should never be frightened by sudden movements or attempts to catch them. With sugar or a little grain they are easily tempted, and always follow their mothers into a shed or stable. They are naturally docile, and may easily be accustomed to being patted and made much of in the open field.

Training to the Halter

When the colt is a week or ten days old put on it a strong, nicely-fitting halter and lead it around, each day giving it a little lesson, and then tie it up for a half-hour. It must never break the halter, as this it would remember for a long time. Also among the first things, give the youngster a name, and it will soon learn to know when it is spoken to. It should be carefully groomed once a day, chiefly with the brush; also pick up its feet and clean the dirt out of them. This gets the colt accustomed to having its feet handled, and will soon pick them up itself when its caretaker desires. Tap his feet with something solid, going through the motions made by the blacksmith. Hold an umbrella over him. Rustle newspapers around him and under his feet. Rap his heels lightly with something that has the same effect as hitting his heels with a crossbar or sleigh runner. If time enough is spent with him he will learn the meaning of the words whoa, back, gee, haw, steady, etc. His mind is plastic and his will power has not yet shown itself, but he will never wholly forget these lessons, which might be termed kindergarten lessons, with a lump of sugar as a reward.

The colt should be weaned when five or six months old; then if it is to be put on pasture, never allow it to forget you and what training it has received. As often as convenient go to the field, always taking along some dainty morsel for the youngster. Call it by name, give it the dainty and slip the halter on as easily as possible. Thus continue your friendship with the colt until it is about one year old. Then while tied in the barn, put the bridle on it for only a short while at a time, each time leaving it on a little longer, until it takes the bit and ceases to chew at it. Lead it around with the bridle on, teaching it only one thing at a time.

Put Him In Harness

In the next few days put the harness on the colt gently, and allow the youngster to stand in the barn for an hour or so each day with the harness on, for a week. Then lead it out a few times with harness, bridle and all on. Having the colt well accustomed to the harness and bridle by the time it is two years old, it should be no trouble thereafter. It is important that the harness be good and strong, as the slightest break might frighten the colt into bad behavior.

If just one colt is being trained to work double, it is best to put it alongside a good horse that is not too slow, for this worries a colt. I was training two colts (two-year-olds) and after going through with the previous lessons given here, I hitched the two to a spring wagon and they trotted off as nicely as one could desire. I always carry a whip, but seldom use it. I teach my colts to back as well as pull; to obey immediately when given the command to start or stop. Generally speaking, they are afraid of nothing. I always let them have a good look at whatever they might shy at. Then they are content. It is best to let the colt see all the scarey objects, such as automobiles, engines, etc., as soon as

Plowing is hard work for your horses

Give them good Feed

You can give them nothing better than crushed oats;—crushed oats are more easily digested than whole oats and the horses get the full food value, the bone and muscle-building qualities. There is no waste and a smaller quantity will go farther;—It is, therefore, more economical.

The Champion Oat Crusher

is a strong, durable machine, easily operated, stands the wear of continual use.

Sold by International Harvester Co.

Our Catalog "V" will give you full particulars and show you how to cut down feeding expenses.

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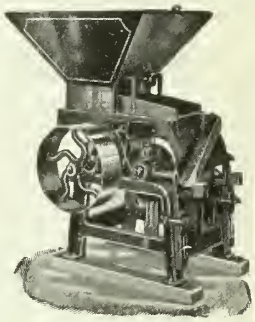
JOLIETTE, - QUEBEC



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EDWARDSBURG GLUTEN FEED

If your cows are not giving all the milk they should give, you are losing money.

Edwardsburg Gluten Feed will not only enable your cows to give more milk but will keep them in splendid condition.

Used on the Government Experimental Farms

Edwardsburg Gluten Feed is approved by Government experts and is guaranteed to contain 23% Protein, 3% Fat and 6% Crude Fibre. It is rich in nourishment, economical to use and will give you quick results.

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$1. for a Horse

Save a horse and you won't have to buy one. Don't sell or destroy any horse on account of Spavin, Splint, Ringbone, Curb, Sprains or Lameness. Spend one dollar for a bottle.

KENDALL'S SPAVIN CURE

has saved a great many horses — has put them back to work, even after they have been given up. Over 35 years of success have proved its value.

Mr. J. M. Grondin of St. Lin, Que., writes: "I have been using your Spavin Cure for many years, always with excellent results."

Get Kendall's Spavin Cure at any druggist's. Price, $1.00 per bottle, 6 bottles for $5.00. "A Treatise on the Horse" free at druggists or from

Dr. B. J. Kendall Co., Enosburg Falls, Vermont, U.S.A.

Heaves AND HOW TO CURE

—A Standard treatment with years of success back of it to guarantee results is

Fleming's Tonic Heave Remedy

Use it on any case—No matter what else has been tried—and if three boxes fail to relieve, we will Refund full amount paid. Further details in

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will remove them and leave no blemishes. Reduces any puff or swelling. Does not blister or remove the hair, and horse can be worked. $2 a bottle delivered. Book 6 K free.

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We buy outright in any quantities
OATS, PEAS, BEANS, ETC.
TURGEON & GOURDEAU
Largest Grain and Provision Brokers on the Spot
QUEBEC, CANADA

possible, as then it becomes accustomed to them much more quickly. Colts also drive better if the same ones are worked together in the same way as much as possible. Teach them to stand quietly without being tied, though do not trust them too far while they are young and frisky.

Care must be taken never to overload the colt. One of the chief dangers in working colts too hard is the rising up of the loins, which is spoken of as getting "up" in the back. This is always a disfigurement, and can never be cured. It is the result of a strain, which may be caused in a moment, and is always a sign of the animal having been overtaxed when young. Strains may affect the joints in numerous ways, and are best avoided by never overtaxing the colt in the least.

Training the Gait

One of the leading principles to be observed is consistently to keep the colts well up to the bit, they being made to go into the bridle nicely and move in a properly balanced manner. A good balance is not to be obtained straight off, as a young horse always inclines to sprawl, and is more or less awkward in its movements, while often it keeps behind the bit or else lies heavily on the hand into the bargain, thereby rendering the task of balancing it all the more difficult. It is only by slow degrees that a more balanced style of carriage and moving can be brought about. It would be wrong to try and force matters too rapidly, for it is only after the young animal has gained increased strength and had its muscles developed and supplied by being worked, that it loses its original awkwardness of gait when traveling.

When putting their weight into the collar, young horses naturally incline to go somewhat heavily on the forehead. This tendency needs to be carefully combated, and the aim should always be to make them as light as possible in front, partly by inducing them to raise the forehead more and to carry head and neck well up, and in part by accustoming them to bring their hind legs nicely under the body. The higher they are in the forehead, the higher and freer will be their action in front.

There is nothing more important in the education of young horses than that they should be taught to start off smoothly. Very commonly they are apt to jump forward into the collar with a jerk, a habit which ought to be consistently checked from the start, trivial though it may seem, otherwise it tends to make them unsteady, and in the case of high-mettled animals, sometimes becomes so ingrained after a time, that it is difficult if not impossible to eradicate. Neglect to attend to this fault in the earliest stages may even result in the horse developing a propensity to balk, for in jumping impetuously into the collar it receives a sharp check which irritates it, and may render it disinclined to face the collar properly. Of all the faults of temper and vice horses are subject to, none is so troublesome to deal with or so damaging to a horse,s usefulness as balking, at least for harness purposes.

Teach to Stand

In order to train the young animal to habits of complete steadiness in harness, it is desirable that it should from the outset, be accustomed to stand quietly for some moments and without attempting to move off after the driver has taken his seat. Once taught to do this they will but very rarely give any trouble in this direction afterwards. Many horses prove themselves a nuisance owing to their impatience to be off and beginning to fidget immediately they feel the driver grasp the reins. They can with difficulty be restrained from starting off before he is properly settled in his seat, and this most objectionable fault is invariably induced by bad training, but with proper care is avoidable.

The horse is man's best animal friend and comes nearest to man in intelligence. He is subject to man's will and is at his mercy. More humane treatment and more care in educating would result in more benefit to man from this indispensable animal.

Woolly Aphids

Continued from page 22.

Dan's Expenses for His Farm

Hired help by the day ...	$150.00
4 cattle bought .....@$50	200.00
Running expenses of farm	200.00
Grocery and butcher bills (balance from the trade in butter, etc.)	48.00
Clothing, 2 children)	75.00
Church	50.00
Seed grain, feed, etc.	100.00
Spraying materials, etc. ..	30.00
	$853.00

"You see he requires less food bills, for he hires by the day, and does not have to board a man, and he does a good deal of his own work in the orchard in the slack times of the year."

"Now his investment is valued at $12,000, the apple trees giving a bigger value to the land."

Interest on $12,000 .....@6%	$720.00
Depreciation of Machinery, buildings and trees	500.00
	$1,220.00

"This leaves a total of $2,073, which gives a balance of $777 as payment for his services and that of his good wife. Now, Billie, that is a better salary than you are getting. It must pay to bother with Woolly Aphids. Moreover, much of that interest value is clear gain to him as the valuation of the place has occurred through his own efforts. I should say he was $500 a year better off than you were, besides having a farm rapidly increasing in value."

"By George, Mack, there is a thunder storm coming sure, and I must get those sheaves set up before it comes. See you again." And Billie made a bee-line across the creek meadow.

Truth About Lightning Rods

By PROF. W. H. DAY

Continued from our March Issue

Why Strokes Sometimes Occur in Spite of Rods

But, one is disposed to ask, if rods in many cases prevent strokes, why not in all cases? The points allow the charge to leak off, but there is a limit to the rate at which this leakage can occur. If the charge accumulates at a rate faster than that, then a flash may take place. This is sometimes brought about in the following way: Two clouds lie near each other. The buildings under the first are rodded, but not under the second. A flash occurs between the second and the ground, followed by a flash between the first cloud and the second. This changes the pressure in the first cloud so suddenly that the leakage does not neutralize the charges as fast as the difference in pressure demands, hence a flash occurs. But that flash is much weaker than if the rods had not been there.

How to Rod a Building

Let us now enquire: "When is a building properly rodded?"

1. **Ground Connections.** For an ordinary building, not an L or T, two groundings should be made, preferably at corners diagonally opposite, though this may be modified to meet conditions, e.g., to run near conductor pipe from eave-trough and which should be connected to the cable as indicated later. Another factor that may sometimes influence the selection of the ground rod locations is the presence of manure and the liquid from it. The ammonia in the manure will attack the copper rods, and in a few years eat them off. The heat of the decaying manure will hasten rusting of the iron rods. Consequently ground rods should be located where there is no manure. Some rodding companies in Michigan use a length of half-inch gas piping to protect their ground rods. This pipe is first closed at one end by welding and then sharpened, after which it is driven in the earth point downward until the top is within a foot or so of the earth's surface. The cable is then shoved down inside the gas pipe till it reaches the bottom, and the pipe then flattened at the top till it presses firmly on the cable. The Patrons Mutual of that state prefers that the groundings be thus protected before they accept the risk in their rodded class, and as already stated they have paid in eleven years only three lightning claims on rodded buildings. The Protected Mutual, on the other hand, will not accept a risk at all if the gas-pipe protection is used. They make two objections against it, one that the pipe acts somewhat as a choke coil, the other that the cable is frequently eaten off at

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Getting fast in the stall.
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Crowding in the stall.
Fighting halter or bridle.
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Pulling on one rein.
Lugging on the bit.
Lunging and plunging.
Refusing to stand.
Refusing to back.
Shying. Balking.
Afraid of automobiles.
Afraid of robes.
Afraid of clothes on line.
Afraid of cars.
Afraid of sound of a gun.
Afraid of band playing.
Afraid of steam engine.
Afraid of the touch of shafts or harness.
Running away.
Kicking.
Biting. Striking.
Hard to shoe.
Bad to groom.
Breaking straps.
Refusing to hold back while going down hill.
Scaring at hogs or dogs along the road.
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Jumping fences.
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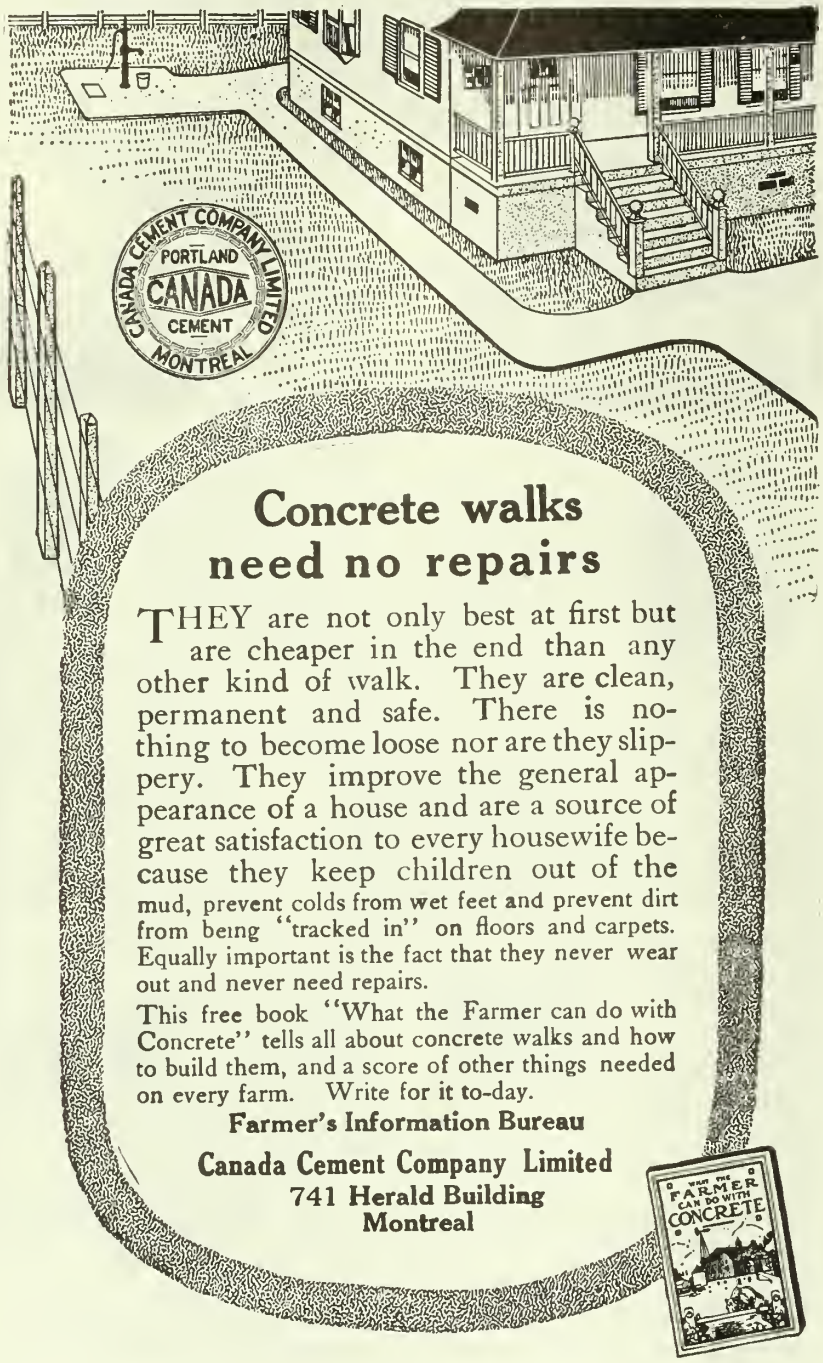

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the top of the pipe by the electric current passing from the cable to the pipe, thereby putting the system out of order.

It would seem that as yet this method of making groundings is open to some question and it would appear wiser to locate the ground rods where there is no manure then there is no need for the gas-pipe.

On an L- or T-shaped building there should be at least three groundings. Two of the damages suffered by the Protected Mutual happened in the following manner: The building was a T-shaped one. There was a ground rod at each end of the main part, and from the main system a cable ran along the ridge to the other wing and a point was placed about five feet from the end, but the cable was not continued further, there was no ground rod for this part of the system. Later a telephone line was run to the house, entering near this stub end. The ligtning flash struck the point on this wing, and divided, part following the cable and part jumping to the telephone line. If there had been another ground connection for this portion of the system no damage would have occurred.

All ground rods should go deep enough to be in perpetual moisture. In Michigan where rods are subject to insurance inspection it is insisted that ground rods must go at least eight feet in the earth.

Importance of Proper Groundings

Here let me sound a note of warning to everyone who is having his buildings rodded: Be present and see the ground rods put down. Know for yourself that the rods are actually down eight feet or more. Don't take anybody's "say-so" on this point. Lightning rod men, as a class, are as honest as any other class of the community, but an odd one is unscrupulous and will "scamp" the job if possible. We have records of cases where the rodding agent instead of putting the cable eight feet straight down in the earth has coiled it up and burried it in a shallow hole in dry earth. Nothing could be more dangerous. When electric power companies want to prevent the lightning from coming in on the line wires and damaging their machinery they make a "choke" coil of several turns of the wire just inside the station and beside the line put a ground wire. When the lightning follows the line to the station that "choke" coil makes it so difficult for the sudden current to pass that it jumps the air gap to the ground wire in preference and thus escapes to the earth. Now the coil at the foot of the lightning rod acts just in the same way. It chokes the flash back and makes it take some other path, down through the building, probably firing the building on the way.

2. **Cable.** The cable beginning at one ground rod should extend up the corner, make a gradual turn at the eaves, go up the edge of the roof to the peak, along the peak to the other end, down the edge to the roof to the eave and down the corner to the other ground. All turns should be rounded rather than angular.

As the cables near the ground are often subject to injury by stock, imple-

ments, etc., they should be protected by wooden strips fastened together in suitable form and nailed over the cable from the ground up to a height of six or eight feet.

Points Twenty to Thirty Feet Apart

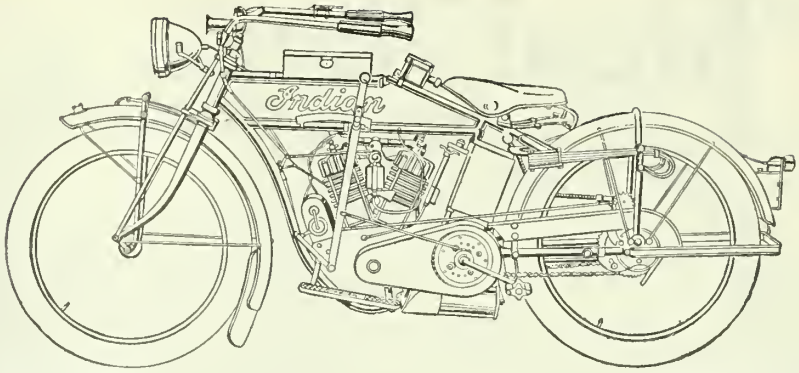
3. **Points.** At intervals along the cable on the ridge there should be placed uprights with points that will not corrode. There is no absolute law as to the distance apart at which these points should be placed, but a rule frequently used as an approximate guide, is that the distance between them shall not be greater than twice the combined height of the two uprights. By this rule if the points were five feet in height they would be placed about twenty feet apart. The experiments with the little machine have shown us that the flash selects angles and prominences, and we know that lightning shows the same preference in this respect. Consequently points should be placed near each end of the ridge, on or beside chimneys, and on cupolas and dormers.

On these uprights ornaments of one kind or another, such as bright balls, are frequently placed. According to at least three manufacturers of rods in Ontario, these fixtures are of no use in telling whether the building has been struck by lightning.

No Insulators to be Used

4. **Attachment. Insulators should not be used.** The rods should be in metallic connection with the building. This method of attachment is in direct opposition to that practised when lightning rods were first used. It was then considered desirable to insulate the rods from the building by glass or earthenware insulators. In a thunderstorm the entire outer surface of the building is charged by electricity, and by having the rods in metallic connection with the building the charge is conducted to the rods and thence to the point, where it leaks off and neutralizes the opposite charge existing in the cloud.

Several methods are used of fastening the cable to the building. Some companies use copper nails, which are driven right through the cable. Others use staples, others clips which hold the cable tight to the building, and some use a clip which holds the cable out about an inch from the building, the claim for the latter method being that with the rod standing out chaff, straw, and the like would not so readily collect between rod and building, and thus a danger of fire is avoided in case a stroke occurs. At first I rather thought this point well taken, but after finding an efficiency of 999 cases out of 1000 in Michigan where the rods were practically all fastened close to the building, and the three small damages that did occur all being due to other causes, I concluded it would be rather difficult to secure any higher efficiency. While I say this, I see no particular objection to having the rods stand out from the building, unless it might be that the rod is more exposed and thus more subject to injury.



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Is Stronger Than The Strongest

The Weak Exist; But The Strong *Live*

Strength is what you want in a *fence*. You want a *fence* that will *live*; a *fence* that will *last*; a *fence* that possesses *great strength* in *every wire*.

To get *strength* you must get *weight*. The *heaviest fence* contains the most *strength*. Weigh "*Ideal*". Compare its weight with any other *fence* you can buy.

No small weak wires in "*Ideal*". From top to bottom it's all the same —*all No. 9, all hard steel wire and every wire full of strength and properly galvanized to protect and preserve that strength.*

Strong unruly animals can look through but not break through "*Ideal*". It's *stronger* than the *strongest*.

Why not buy the fence that possesses the greatest strength—that weighs the heaviest, that contains the most real genuine value. "*Ideal*" is the cheapest for you in the end.

Our "*Ideal*" representative, in your section, will gladly tell you more about this *strong "Ideal" fence*. If you do not know him drop us a card. Also ask for catalogue 17

The McGregor Banwell Fence Co. Ltd.

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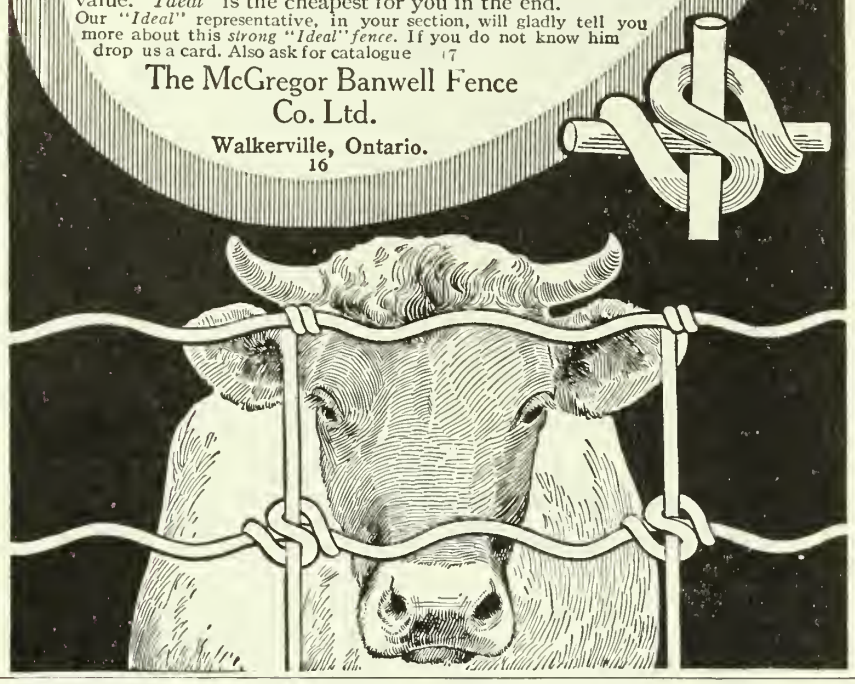

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Even though you pay a few cents more for good quality paint, poor paint will cost you more than double within five years. This is the way to figure the paint question. If you apply JAMIESON'S PURE PREPARED PAINTS, you will get years of good service. A poor quality paint will cost you almost as much in the beginning and at the end of about a year you will have to buy another supply and paint up again. Added to this second expenditure you have the double cost of applying.

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Jamieson's Pure Paints and Varnishes

They give many years of service and protection, hold their good appearance and withstand the most severe weather conditions of frost and heat. JAMIESON'S PAINTS are backed by an experience of over half a hundred years of paint productions. They have stood every test that paint is subject to.

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Systems

7. **Systems.** All the cables on a building should be connected in one system. Sometimes it is found that on a "T" shaped building, for instance, the rods on the one part are not connected with those on the other. Numerous instances are reported where damage has occurred between these two systems, the lightning striking the one system and part of it jumping across to the other. Consequently, divided systems should be scrupulously avoided.

Wire Fences

8. **Fences.** A wire fence is not properly grounded, unless in large fields there is a grounding at least every twenty rods, and in barnyards or small yards where cattle are herded at every corner. Where fences are connected with a building there should be a grounding at the first post from the building, and moreover the ground rod from the building should be connected with the fence. A fence grounding should consist of a rod or cable equal to three No. 12 wires or one No. 9 wire stapled over or connected with each lateral wire of the fence, and extending at least three feet into the ground. If the ground wires are allowed to project a few inches above the fence strokes are prevented in the vicinity of the fence just as by the points on a building.

RATS AND MICE

TRAPS are good while they are new, and almost any good contrivance will answer for a time. To keep down rats and mice effectually there must be invented a succession of new modes of action for these creatures. Rats especially are so clever that they soon see through our devices.

Generally speaking, two rules may be prescribed. In the first place, it is imprudent to fill up their holes and stop their runs. Let them have their way. If you stop them, they will make new thoroughfares, to the further injury of the foundation, and, besides, when you know of their runs you know where to put traps and poison for them.

As for the best poison, there is nothing so effectual as arsenic. A fat herring split down and well rubbed with common white arsenic will kill a score of rats. Cut it into four parts and place these in or near their runs. Cover them with tiles or boards to prevent dogs or cats obtaining them. If this fails, try bread and butter dressed with oil of rhodium and phosphorus. The oil of rhodium seems to possess an irresistible attraction for these vermin.

When dry food is preferred, there is nothing so good as oatmeal, and it is a golden rule to feed rats for a few days with pure oatmeal and then to mix about a fourth part of arsenic with it.

One man disposed of a colony of rats by catching two in a wire trap and well smearing them with tar. They were then restored to their runs. Every rat migrated to other quarters, and not one of them returned. A good fox-terrier will keep a large garden free from rats and mice.

APRIL DAYS on Canada's Farms

There is a soft and mellow tone to the word April. Perhaps the violets, mayflowers, showers and blue skies of other years have combined to picture in our minds this charming setting to Spring's earliest month. April is always welcome on the farm. Bits of green grass, the playful gamol of lambs, the murmur of nearby streams, the gabble of the barnyard fowl,—sight and sounds that accompany rosy sunsets and sunny days on the farm.

The farm boy has a wealth of nature's green and gold as his everyday accompaniment. In everything there is a charm. The stream tells of suckers; the woods and prairies of mayflowers and roses. The making of maple sprup has joys all its own that no city boy can duplicate. In fact the charms of free and field, of flower and blossom are the farmer's peculiar domain during April.

"All very well," says your perennial grouch, "the farm boy and the farmer never have time to admire such things as you write about. His thoughts must constantly be centred on the live-stock labors, the plow, the fences and the wood-getting. His legs are always tired and his hands dirty with cumbersome moil. His eyes are ever on the clods of dull grey monotony, and it is only when he lifts up his eyes from the city marts afar, that he discerns the paradise he has forever lost."

Too often true, we grant you, our grumpy friend! The farmer and his boy too often do live such a humdrum existence. Their very faces, yea even their hair, whiskers, and clothes bespeak the state of their fatalistic beliefs in things in general. But whose fault is it? Do we find duty and pleasure always in some distant field? Do we have to travel away yonder to wear the smile of realization?

Thrice blessed indeed is the farmer who can stand a minute to watch the lambs play, the streamlets gurgle on their way, and the colts beat their frolicksome tattoos on the green pasture floors!

There is heaven in the out-of-doors. There is life in the open. There is money enough in the management of an ordinary farm to rear a family, and keep the home up-to-date in an intelligent interest for lively things.

You can be a farmer like our friend Mr. Grouch, if you will. But it is easier to smile than pout in April. For April flowers are bursting everywhere and Spring-time joys belong to no set of men, circumstances nor things. That man is happiest who enjoys what God has given him and lives the best, to-day.

The Milking Shorthorns

Perhaps the greatest strides in the developing of the Milking Shorthorns have been made in Alberta where the Hon. Duncan Marshall, Minister of Agriculture, has succeeded in gathering together some of the best animals in Canada. He contends, rightly, we believe, that this cow is the best cow for the average farmer, who is not a professional dairyman. There are many farmers who want a cow that can give them a fairly large amount of milk and can raise a good beef calf during the year.

The Hereford has also its good qualities as a milk cow, while the Aberdeen

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To insure the full benefit of fertilizers to the first crop the POTASH and PHOSPHATIC fertilizer materials ought to be applied as soon as possible after the land is workable.

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POTASH in the highly concentrated forms of:

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By using OUR FERTILIZERS which supply your soil with the necessary plant-foods for all crops. That it pays to use OUR FERTILIZERS is best evidenced by the constantly increasing demand for our different brands.

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NOVA SCOTIA FERTILIZER CO.
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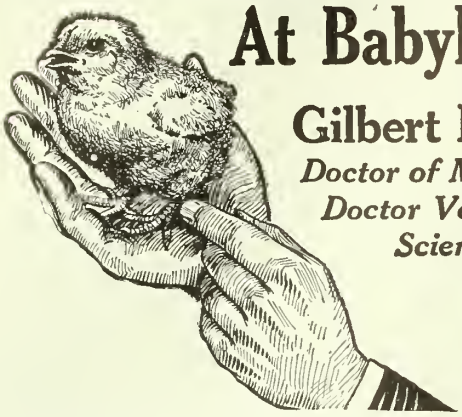
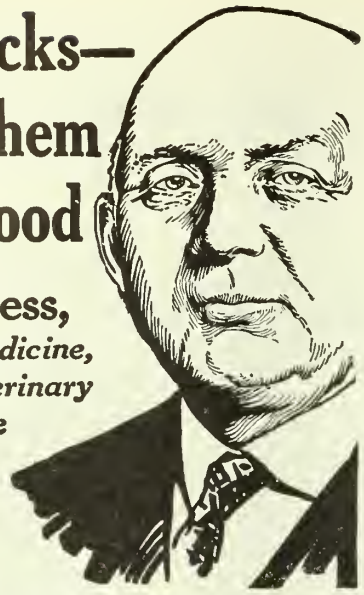
Save *All* your Chicks—Put Stamina into Them At Babyhood





Gilbert Hess,
Doctor of Medicine, Doctor Veterinary Science

The annual loss of young chicks in the United States is staggering. *More than one-half* the yearly hatch die before reaching pullet age—die through leg weakness, gapes and indigestion. Talk about conservation—think of the millions of dollars that poultry raisers could save by saving most of these chicks.

Yes, most of them can be saved—saved by starting them on

Dr. Hess Poultry
PAN-A-CE-A

Right from the very first feed. During my 25 years' experience as a doctor of medicine, a veterinary scientist and a successful poultry raiser, I discovered that, by using a certain nerve tonic and appetizer, *leg weakness could be absolutely overcome;* that the use of another certain chemical that is readily taken up by the blood would cure gapes, by causing the worms in the windpipe (the cause of gapes) to let go their hold and helping the chick throw them off. By combining these same ingredients with bitter tonics and laxatives, I found that I could control and invigorate the chick's digestion.

My Poultry Pan-a-ce-a helps put stamina into the chick, strengthens and cleanses its system and sends it along the road to maturity, hardy and robust. Most of the biggest poultry farms in the United States, where chicks are hatched out by the thousand every day during hatching season, feed my Pan-a-ce-a regularly.

Dr. Hess Poultry Pan-a-ce-a is the result of my successful poultry experience and scientific research in poultry culture—there is no guesswork about it. Ingredients printed on every package. Now listen to this

Get-Your-Money-Back Guarantee

You buy Dr. Hess Poultry Pan-a-ce-a of your dealer. If it does not help your chicks grow, keep them well, make your poultry healthy and your hens lay, he is authorized to refund your money; you can't possibly lose—Pan-a-ce-a must pay or you get your money back. Costs a penny a day to feed 30 fowl. 1½ lbs. 35c; 5 lbs. 85c; 25-lb. pail $3.50 (duty paid). Buy of your dealer—Pan-a-ce-a is never sold by peddlers.

Dr. Hess Stock Tonic

Your stock need this tonic now to harden and condition them after the confined heavy feeding of winter. There's nothing better to put horses in trim for hard spring and summer work. Milch cows need it badly just now to prepare them for the heavy milking season ahead. Dr. Hess Stock Tonic makes all stock healthy—keeps them toned up and expels worms. Sold under money-back guarantee. 25-lb. pail $2.25; 100-lb. sack $7; smaller packages in proportion (duty paid). Send 2c for my *new* free Stock Tonic book.

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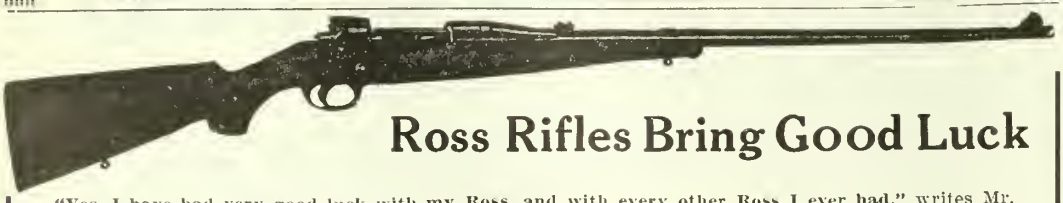
Kills lice on poultry and all farm stock. Dust the hens and chicks with it, sprinkle it on the roosts, in the cracks or if kept in the dust bath the hens will distribute it. Also destroys bugs on cucumber squash and melon vines, cabbage worms, etc., slugs on rose bushes, etc. Comes in handy sifting-top cans, 1 lb. 35c; 3 lbs. 85c (duty paid). I guarantee it.

DR. HESS & CLARK, Ashland, Ohio



Ross Rifles Bring Good Luck

"Yes, I have had very good luck with my Ross, and with every other Ross I ever had," writes Mr. Harry A. Preston, of Massey, Ontario. His experience is not unique. **"Ross Luck"** is getting to be a proverb among hunters of big game.

The reason is the low trajectory, which makes a hit out of what with another rifle might have been a miss, and also the extraordinary destructive effect of the Ross Sporting Cartridge with copper tube expanding bullet, patented.

The Ross .280 Rifle and this .280 Ross Sporting Cartridge are **the most effective aids to bag big game.**

The Ross .280 High Velocity Rifle sells at $55.00. Ross Sporting Ammunition $7.50 per 100. Sold by best dealers in the United States and Canada. Other models Ross Rifles from $12.00.

Illustrated Catalogue free on request.

ROSS RIFLE CO. - - QUEBEC

Angus men say they have some startling records in the breed for big milk productions. Horns and hides are no longer passports to cow aristocracy. They must show milk and fat.

The Cleaning Up Work

April is the cleaning-up month on the average farm. Although many may have to leave much of the work for May, yet there are many days in April, before seeding, that can be profitably used to a thorough cleaning of yards, gardens, and buildings. Rake up all dead leaves, gather all the brush, and see that they are burnt as early as possible. Much rubbish accumulates around the house during the winter, while unsightly piles of coal ashes do not add to the beauty or good nature of the place. Coal ashes can be used on the heavy clay soils or incorporated into walks or for filling in depressions.

Colts are Valuable

Yearlings and two-year-olds need considerable grooming, attention to their feet and a little extra feeding this month in order to send them into the pasture in first-class shape. The growth of the animals must be made this year and we must not handicap future horses in this respect.

It will be found that those who have fed alfalfa liberally during the winter will have the least trouble with their colts being out of order.

Keep brood mares in exercise. It is a better policy to have her working every day in the team than it is to have her idle, provided she is not overworked or strained. Many are worked right up to the time of foaling.

Where there is any likelihood of blemish coming, or where the animal shows signs of malnutrition, it is well to have a veterinary's advice at once. A perfectly healthy horse under good treatment will do well, and it is a good policy on the part of the farmer to see that the animal is in good health.

Trim the colt's and brood mare's feet before they go out on pasture. It is well to remove the shoes from the brood mare. As to watering and feeding it is a moot question which should be done first, as various practices obtain. Common sense is the best judge in the matter.

With the Dairy Cattle

Dairy cows are selling high in all parts of Canada. In the matter of Holsteins there are perhaps more sales taking place this spring than ever before in the history of Canada. This breed has made wonderful strides on the farms of Canada during the past five years while their association is taking exceptional pains to develop records of performance which after all count the most in the dairy operations. A word of warning might also be handed out to the prospective buyer of dairy cattle—not to be led into the purchase of everything that is black and white. One's common sense and business judgment must surround every purchase. A good Holstein is worth good money. Get the good ones.

BUFFALO BRANDS FEED THE FARMS
TRADE MARK
THE FARMS FEED THE WORLD

RAISE 76 BUSHELS OF OATS PER ACRE

This is what Mr. W. M. Burdick, of Aylmer, did with an application of 300 lbs. BUFFALO FISH GUANO per acre without manure. Mr. Burdick more than doubled the average yield in Ontario. It was not only a big yield, but his oats weighed 38 lbs. to the bushel.

BUFFALO BRANDS **insure** your crops, **increase** the yield and **improve** the quality. They are **soluble, available** and in perfect drilling condition. Our book, **"CONSERVATION OF SOIL FERTILITY,"** mailed free, will help solve your soil problems. Also write for our pamphlets, **Hay, Corn, Forage Crops and memorandum book.**

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STONE'S FERTILIZERS

Any farmer can get bumper crops out of worn-out soil if he uses **"STONE'S" FERTILIZERS.** Experiments have proven that the yield of fertilized soil is 37.1 bus. average per acre. Unfertilized soil only yields 13.1 bus. average per acre.

STONE'S FERTILIZERS have proven their productive qualities. Hundreds of farmers use.

Made from the best available Nitrogen, Phosphoric Acid and Potash, mechanically mixed, in perfect cured condition for drilling without clogging.

Write for Catalogue "S" and directions.

William Stone Sons, Limited
Woodstock, Ont.

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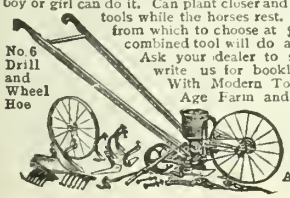
Helps his wife to plan her table in busy times. Saves work and worry, saves buying so much meat, gives better satisfaction to the help. A good garden will be almost impossible in your busy life without proper tools. They cost little and save much hard work.

IRON AGE WHEEL HOES AND DRILLS

will sow, cultivate, ridge, furrow, etc., better than you can with old-fashioned tools and ten times quicker. A woman, boy or girl can do it. Can plant closer and work these hand tools while the horses rest. 38 combinations from which to choose at $3.00 to $14. One combined tool will do all of the work. Ask your dealer to show them and write us for booklet, "Gardening With Modern Tools" and "Iron Age Farm and Garden News" both free.



No. 6 Drill and Wheel Hoe

The Bateman-Wilkinson Co., Limited
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The Jerseys are much in demand. Owners of individual cows prefer this little animal to almost any other.

Every care should be taken to see that the cows have abundance of pure air, fresh water, and sunlight.

Ayrshires are readily coming to the front through the efforts of their association, and in many parts of the country this breed predominates. Many a Scotchman is particularly fond of these cattle, and their gentleness and hardy characteristis have commended them to many Canadian farmers.

Alfalfa and other Clovers

Considerable seeding of alfalfa is being done this spring in Alberta and Ontario, and we would refer the reader to the article by Hy. Glendenning appearing in the March number under this head for information as to the treatment of the spring crop. From fifteen to twenty pounds of alfalfa is sown to the acre, while the best seed is what is known as the Ontario Variegated, a seed having the same history as "Grimm's." Red and alsike clovers will be much in demand. Clover is our nitrogen factory.

The Scotch Shorthorns

In the beef business, especially in the Shorthorns, fads have predominated to such an extent as to change the whole course of breeding at different times in the history of the breed. The "Bates" and "Booth" strains were succeeded by the "Cruickshank" and "Aberdeen Scotch" types, to be in turn led by the present animals of a better milking strain.

It is safe to say that the development of purely beef characteristics has gone far at the expense of the milking characteristics of the breed. Now the pendulum is swinging back.

The Spring Calves

In many cases where the milk is sold from the farm, it is often considered the better part of wisdom to veal the calves. This may have to be revised somewhat this spring in order to have these calves raised for beef purposes. Good calf foods are on the market, while linseed meal and other concentrates can be used to advantage with a slight ration of milk toward bringing up a healthy calf. In our younger days the raising of calves used to be one of the delights of the farmer's boy, and both the boy and the calf grew up to noble purposes. Calf-raising should be a real business this year.

Tile Draining

Perhaps there is no better operation that the farmer can plan for the summer work than that of a complete system of tile draining for his whole farm, or that part of it which is yet without them.

The special article appearing in this issue on this subject will emphasize the importance of getting a dollar and cents standing of the work of the tile drains. The Gold Medal farm in York County, Ontario, owned by the late Simpson Rennie, has over ten miles of tile on the

This may happen in your stables

But if wise, you will prevent it with CORK PAVING BRICK, the modern stall flooring.

CEMENT flooring is the cause of many slipping accidents and many a good animal is lost. Moreover much ill-health of stock is the result of lying on the cold cement floors. Though wood floors are warmer, they are very insanitary and should not be tolerated. They get foul and rot quickly, causing hoof rot and other kindred diseases.

To solve the problem

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has been produced. It is warm, resilient and non-slippery. Absolutely sanitary, easy on the feet, noiseless and remarkable for durability. Will not chip or splinter. They have none of the disadvantages of wood or cement, but possess all their advantages, and many other benefits not found in any other flooring material. CORK PAVING BRICK make for better and more healthy stock.

Dairymen and stock raisers the country over are installing the practical floor covering. They are taking the precaution to save and protect their animals and thus increase their profits. Why delay? The cost is small, the service lasting.

Write for sample brick and catalog "K," showing the importance of good flooring.

The Kent Company Limited
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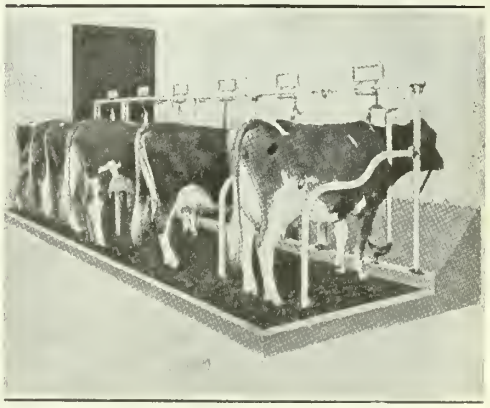
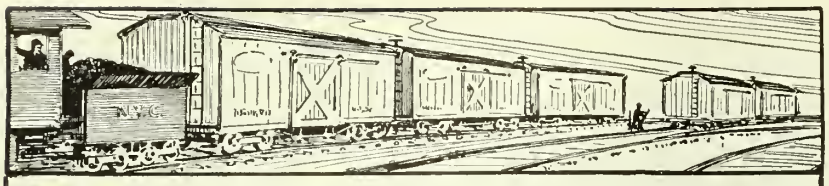


In this Stable only Actual Stall Floor is Bricked.



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The greater productive capacity of high-grade fertilizers without so much filler means a greater outbound tonnage for railroads and greater purchasing power for farmers, so that railroads and everybody would be benefited.

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Live Stock Pavilion on the Toronto Exhibition Grounds Roofed with ASBESTOSLATE

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Asbestoslate is not an experiment with the Exhibition authorities—they had already used it on the roofs of the Dominion Building, the Women's Building and the Police Station.

This is but an instance of the way government, municipal, and public authorities generally are now specifying Asbestoslate—and it is used by every Railway in Canada.

Asbestoslate is fireproof — weather-proof — needs no paint or dressing—and is practically everlasting. For private residences, as well as for public buildings, it is the most satisfactory roofing made.

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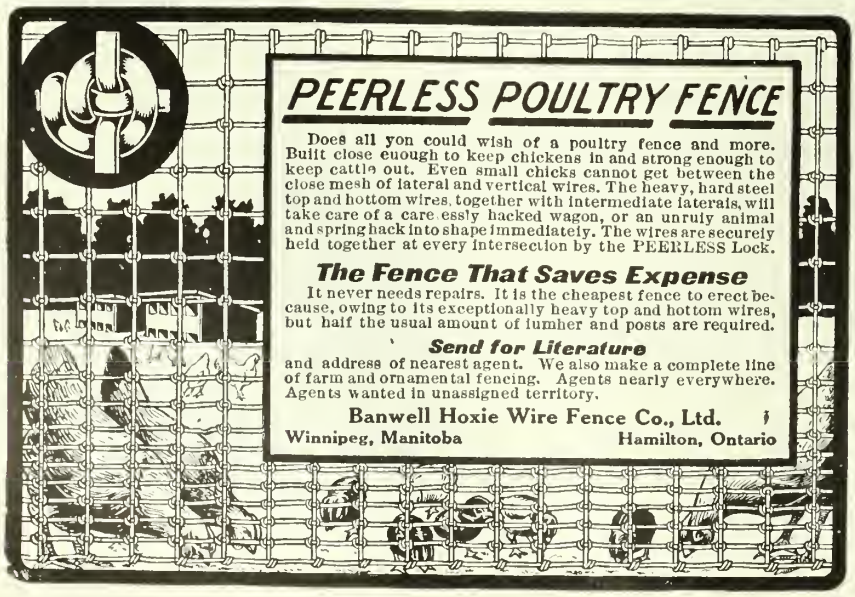

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It never needs repairs. It is the cheapest fence to erect because, owing to its exceptionally heavy top and bottom wires, but half the usual amount of lumber and posts are required.

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and address of nearest agent. We also make a complete line of farm and ornamental fencing. Agents nearly everywhere. Agents wanted in unassigned territory.

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hundred acres, and although the farm is low, these were so well put in that water never stands on this land after the heaviest showers as long as twenty-four hours. It is needless to say that there is never a failure of the crop no matter what the weather conditions. Of course, the farmer who does not plan and look ahead must be prepared for crop failures and hard times, not forgetting to blame Providence for having placed him in such uncongenial surroundings.

With the Spraying Machine

The spraying machine must be in operation this month on every fruit farm in the country. If a dormant spray has not been applied in March, it should be done in the first two weeks of the month, when either Bordeaux mixture or lime sulphur should be used. The trees should be completely covered with the mixture as a part missed will mean the propagation of numerous scale insects and fungi.

Particularly good is the dormant spray for the San Jose scale and the Oyster Shell. A good spraying of lime is often beneficial on trees affected with scale, and on young trees to prevent sun scalding. The proportion of the commercial lime sulphur for a dormant spray is 1 to 10. In the special fruit districts home boiling lime sulphur will be done during the month and the sprays put on with power machines. But the average fruit-grower throughout the country will find the barrel sprayer to be sufficient for his purpose where the orchard is not over three or four acres in extent.

Prepare the Seed

It is a well-spent day's work when the farmer will put his seed grain through the fanning mill the third and fourth time before sowing so that he can screen out all the small and foreign grains. The big seeds are the hardiest seeds and are most likely to produce the biggest results. Of course, the larger the seed, the fewer in the bushel, and it may mean the sowing of a little more to the acre than when the seed is small, but this will pay. Some men have sown four bushels of peas to an acre in older Canada and have had good results.

There are too many wild oats in the country, and as far as possible a farmer should sow either clean oats well screened from his own farm or purchase sufficient seed from those farms that he knows to be free of foul seeds. Much can be made out of oats for seed purposes if the latest and best varieties are used for this purpose. The O.A.C. No. 72 oat is making good in Ontario.

In scanning the seed catalogues, it is well to have a sample of the grain you propose to buy and it can readily be gotten by sending to the dealer.

Fumigate the Seed

There is too great a loss at present on the average farm through smut. This can be prevented by treating the seed to an application of formaldehyde during the month of April. This can be easily done by spreading the grain on the barn floor and sprinkling with the ordinary

sprinkling can, and then turning it. This will soon dry out and leave the grain perfectly free for running from the spouts of the drill. There are many fields in Ontario, where one-tenth of the total yield is lost through smut, and smut is caused by the spores being present in the seed grain.

Make a good seed bed. Do not get into such a hurry to have your spring seeding done that you will "slap it into any kind of ground" as one man suggests—it does not pay. A good crop might be developed on a virgin soil, but on the average farm it is taking a mighty chance. Extra cultivation with a disc harrow, spring tooth cultivator, or harrows will do a wonderful amount of good. The finer you get the seed bed the easier it is to hold moisture and to insure prompt and uniform germination of the seed. Unless grain germinates within two days, the yield will be considerably lessened.

In the Flower Garden

As soon as the frost is out of the ground sow sweet peas, five inches deep in a well-prepared, rich soil.

Plant Gladioli this spring. They thrive in any good garden soil, and will give a wealth of blossoms for little attention.

After dividing the old dahlia roots start some of them this month, although the end of the month is the best time for planting those wanted for best blooming.

For treatment of roses, read the rose article by Mr. Hunt, florist of the O.A.C., in the March number.

Give the iris (flags) and peonies coverings of old, well-rotted manure as soon as the winter protection is removed.

Poppies make very showy floweries and should be planted lightly in the spots where they are intended to be grown. Poppies do not transplant well.

Asters can be started in the hot-beds or in boxes in the house. There is nothing that gives greater pleasure in the flower line, than the big beds of aster that bloom so riotously in late summer.

Potted plants can be repotted this month. A little lime water added occasionally will sweeten the soil and kill the worms.

Geraniums are perhaps the best all-round border and bed plants we have. By proper planning many fine slips can be ready for transplanting next month.

Planting Trees

This is the tree-planting month in most provinces of Canada for farmers who consider the planting of ornamental and shade trees and wind-breaks this spring. Trees add to the value of the farm in that they conserve moisture, regulate the winds, and add to the beauty and enjoyment of the place. Evergreen trees should be transplanted with as little exposure of the roots to the air as possible. Maples, elms, poplars, willows, ashes, walnuts and birches should be planted this month as soon as possible after the frost gets out of the ground. Many of the experimental stations supply trees for reforesting free. Write to them at once about it.

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UNIVERSAL LIGHTNING RODS

has ever been burned or damaged by lightning, and they are on many thousand buildings. Lightning Rods, properly installed, are almost absolute protection. Prof. Day, of the O. A. C., says that out of every Thousand Dollars' worth of Damage done to unrodded buildings by lightning, $999 would be saved if these buildings were properly rodded.

Think that over.

REMEMBER, TOO, that in twelve years, of all the Barn Claims settled by forty Insurance Companies in Ontario, 66¼% were due to lightning.

You will rod your building some time. Why not THIS year?

If you would like to see the rod itself, drop us a card for free sample.

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Difference in Favor of Spramotor - $2,534.25

With these figures before them, it seems incredible that men will continue to go on trying to grow fruit profitably without spraying.

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All our time and energy for the past twenty years has been given to improving and perfecting SPRAMOTORS. That is why we can give you in the Spramotor over twenty distinct patented features that no other machine can possess. The Canadian Government awarded us the Gold Medal at their spraying contest, Grimsby, Ont., where we entered a Spramotor against ten other machines. We challenge the world on durability and efficiency and give a guarantee with every machine shipped.

SPRAMOTORS are Made in Many Styles at Prices from $6 to $350

FREE If you are interested in securing better results in field or orchard, write us some details of your spraying needs. By return mail we will forward a copy of our valuable treatise on Crop Diseases without charge; also particulars of a Spramotor that will best do your work. This puts you under no obligation whatever. Write us fully this day.

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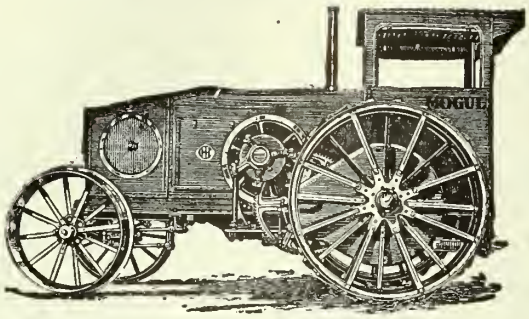

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Particular attention should be given to the layout of the new orchard. There are several plans of planting and the one best adapted to the particular farm must govern. If fillers are used, it is well to plant the main trees 40 feet apart each way with the fillers 20 feet from these trees. When these fillers are cut out, it leaves plenty of room for the main trees.

In British Columbia, apples are planted much closer together and the trees come into bearing sooner and consequently will not attain such a size at maturity as trees in other provinces.

Prune the newly-set tree back and mulch the top of the ground around it.

In the Vegetable Garden

Start early in the month, tomato, pepper, celery, cabbage and beet seeds in the hot-beds.

Common salt or nitrate of soda put on the beds of asparagus or rhubarb during early April will hasten the growth.

Plant peas as soon as the ground can be worked.

Lettuce can go in also, as soon as the land is ready. Sow it at later periods also.

Why not try some new plants in your garden this spring, such as Brussels sprouts, chard, vegetable oyster, etc.?

Artichokes may be planted this month in rich sandy loams.

Potatoes may be planted in the earlier sections of the country, and in the warmer soils. A little fertilizer in each hill will hasten growth.

The Seed Plot Idea

In sowing the spring wheat, the "Marquis" variety is now common enough and within the reach of almost any farmer, while its better derivative may be had in a great many places. Great things have been done for the Western farmer by many men experimenting on seed selection in their own quiet way. Each farmer, especially the big farmer who is raising his hundreds of acres of wheat, should carry on his own seed plot each year by selecting the biggest heads from this plot for the seeding of the plot the next year. He is soon able to increase his average yields for his whole farm to such an extent as to make all the difference between success and failure in agriculture. An increase in three bushels to an acre on a section will mean the payment of a large part of the operating and interest expenses. In fact the seed plot farm is one example of the efficiency farmer.

Many farmers will be sowing barley this year for feed purposes and perhaps for selling under the new United States tariff, but there does not appear to be a very great difference in the prices as yet, and he will be wise who will spread his seeding over several varieties of grains.

Many farmers in Western Canada will ripen barley where they will not ripen wheat, and as such it will be a paying crop. In Alberta, especially where dairy and live stock farming is being encouraged so largely, the growing of barley and oats is a wise policy. Perhaps there

is no greater oat country than that in middle and northern Alberta.

With the Sheep

The sheep will be out of doors nearly the whole month, although they will need good feeding of clover hay, oats and oil cake after the lambs have arrived. See that the lambs have a creep where they can secure extra feed. Dip or treat the sheep with sheep dip, and pay particular attention to the treatment of the lambs. For Western sheepmen a good bulletin has been issued by the Department of Agriculture at Regina. Eastern men will enjoy the special sheep article in this issue.

In the Hot-house

Farmers will often find the erection of a small hot-house to be one of the most paying investments. There are so many things that can be done with a hot-house. I remember visiting the Okanagan Country a year ago, and of seeing a small hot-house erected by the ex-Mayor of Kelowna on his fruit gardens. He told me that one rose bush and one grape vine that year had made him $100 in cash.

Of course gardeners and specialists in farming under glass know full well the value of greenhouses and they erect all kinds from home-made affairs to the big, latest improvement type. One gardener in Toronto has erected several hundred feet of cheap greenhouses from which he had to retire temporarily, and which he rented for $1,000 a year. And the tenant is making good money.

Farmers who have any facilities at all for marketing early vegetables, or flowers, or who wish to do extensive field work will do well to consider this month the charms of the greenhouse possibilities.

Feeding Cattle

Large numbers of the feeding cattle throughout the country will be going to the shambles this month, although many do not leave their stables until well on into May. It will often pay to take a little less in price and be rid of the cattle early in this month than to have the bother with them during the seeding time when help is wanted elsewhere, and when they are likely to be often neglected.

Animals that are to go into pasture should be kept in good condition with their skins loose and pliable and free from vermin. Use sprays and disinfectant washes freely.

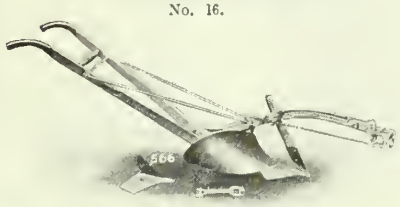
Young cattle are scarce on the average farm in Canada. The high prices of the past season have caused a large output for the American markets. Many farmers will be looking for the purchase of carload lots in the big market centres of Toronto, Montreal, and Winnipeg during this month, and it is not at all improbable that the selection of better animals at a satisfactory price will be an easy matter.

It will be the problem of many a farmer to know just how high to go in

No. 21.

No. 13.

No. 16.



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For the boy—or old man—or inexperienced farm hand. Will run from end to end without holding—and do PLOWING-MATCH work. A Tinkler Wheel Plow—original patented—should have a place on EVERY FARM.

High-class General Purpose, ESPECIALLY good in stubble. Extraordinarily light in draught.

"SPECIAL" No. 5, Narrow, General Purpose. FINE in sod—the neatest kind of a furrow.

Very light two-horse Plow—one-horse attachment if desired — ESPECIALLY adapted to Orchard work.

One-horse Plow—unequalled. Imitated by other manufacturers—POORLY imitated! We give our WORD and GUARANTEE that no other One-Horse Plow equals this in EASE and COMFORT in handling or in WORK in garden, orchard or field.

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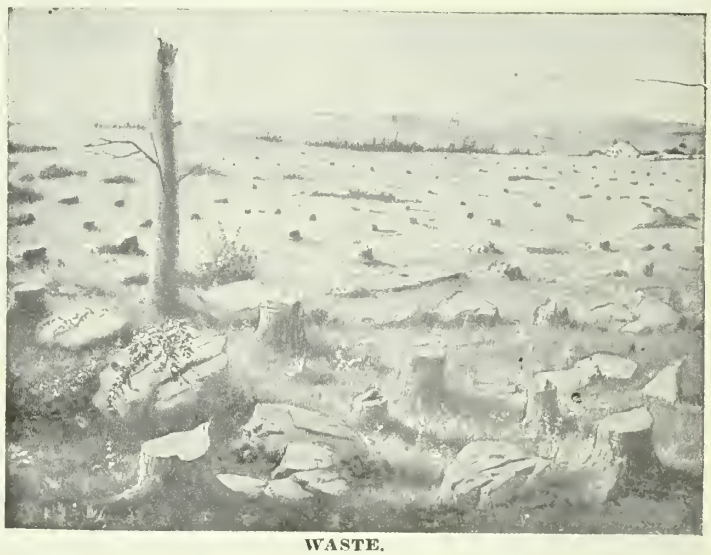
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Canadian Explosives, Limited, Montreal, Que.; Victoria, B.C.

For your Spring Plowing you should use a VERITY PLOW.

There are many reasons why you should use a **Verity Plow** — reasons which it is worth your while to consider, because they mean much to you in the way of making your farming operations yield the best possible returns.

In the first place, owing to their excellent scouring qualities, you can often get on the land and start plowing several days earlier than with other plows. This is an important matter, especially in the Northwest, where a few days' delay may mean the loss of a crop.

The shape of a plow is a point which must be carefully considered. **VERITY PLOWS** have given satisfaction to three generations in this respect. They turn perfect furrows, putting the ground in the best possible condition for the work which follows.

VERITY PLOWS are light draft and easy to handle—they are popular with both man and beast.

Durability is a strong point in connection with these plows — the improved methods of tempering the Steel Mouldboards and Shares and of hardening cast Shares, together with careful erecting and rigid inspection of all plows, combine to produce a line of plows which look well, work well and wear well.

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REMEMBER

Every subscription is entered under the name of the town from which the subscription is received. If you change your address and desire to receive your magazine without delay, always give us your old address in addition to your new address, otherwise we are unable to make the correction in our mailing list. As we publish fourteen magazines and newspapers, please mention The MacLean Magazine in your letter.

THE MACLEAN PUBLISHING COMPANY

143-153 UNIVERSITY AVENUE, TORONTO

order to make some money on the turnover which will take place in October or November. True there is a scarcity of cattle in Canada and the United States, but it must be remembered that the duty is off of all cattle going into the United States, and there may be an unexpected importation from Mexico and South America to offset the high prices that one would naturally expect. Yet it looks as if cattle will remain about the same price at least, as they are at present. The breeding of stock is the great business now, and it will probably be good business for every farmer to get into the breeding game as soon as he can, but it will pay to secure first-class breeding animals in every instance. Cattle are likely to be good property for some time.

Making New Fences

It will be necessary on many farms to overhaul or rebuild fences during the coming season. The old "worm" rail fence is rapidly passing on the Eastern farms, although there are yet many cedar, oak and walnut fences that are standing in many of the oldest-settled parts of the country, but they take up too much room and harbor too many pests to be tolerated by the tidy farmer. Many use these rails by making a straight rail-and-wire fence, while others sell the rails for fire-wood in the villages and towns and erect wire fences. Probably the wire fence under these conditions is the cheapest fence we can put up.

Cedar posts should be set in the ground at least 2½ feet, and 25 feet apart in an ordinary fence row. The principal thing in making a fence is to see that the anchor posts are laid securely. The end post should be in the ground four feet and be cross-braced at the bottom of the hole by spiked-on pieces, while a brace post with wire and wood braces is set about ten feet from the end. Often it is well to fill in around the anchor post with stone and concrete. As all the pull comes on this post it is necessary that it be secure. A good fence-maker can draw an ordinary wire fence with end posts set in this manner and not move them half an inch. Keep a bottom wire as near to the ground as possible, while the ends of the tops of the posts should be sawed off at a uniform height above the wire. It is poor policy to make an unsightly fence for the sake of saving an old rotten post or of losing a day's labor in trimming them. Good wire gates can be purchased cheaply and should be used and kept painted.

Even on the prairies where there are long stretches of fencing to be done, the woven wire fencing will prove to be the most efficient. Of course, the two strands of barb wire with poplar and tamarack posts answers very well for the pioneer period on the homestead. It will be a long day before our farms can do without fences. In the fruit districts, such as in the Niagara peninsula, fences are sometimes done away with.

Grafting Wax

After the sap has begun to flow is a good time to do the grafting. A good wax may be made as follows: Resin 4 lbs., bees' wax 2 lbs., tallow 1 lb.; melt all together and pour into cold water. Then pull this wax until it becomes creamy in color, and it is ready for use.

In the Fruit Garden

Uncover the strawberries as soon as heavy frosts are over. Do not expose the roots too suddenly.

Prune raspberry canes and remove all dead ones.

Spray all bushes with lime sulphur or Bordeaux.

Pruning should be done before the buds burst.

Transplant as early as you can all fruit trees. Grafting can be done as soon as the sap runs freely.

With the Horses

If the farmer has taken good care of his horses during the winter in the matter of feeding and exercise, there will be very little trouble during the month of April when they get into the hard spring's work. In fact the man who takes care of his animals generally knows better than any one can tell him as to the best ways of doing it. To the man who is not particular in this regard, and whose horses are not always an example of good care and keeping, a little advice should help to rectify matters for him.

It is a good plan to clip the heavily-haired animals this month, as they suffer more from having their coats rough and wet with perspiration than they do from the inconvenience of the weather, which could be easily offset with the use of blankets. There is this danger though when the horse is clipped, that the man who is working the animal may press it a little too hard owing to the fact that he does not see any perspiration.

Keep their feet thoroughly cleansed each night. Groom thoroughly daily and supply them with good clean bedding.

A poor driver is an abomination around a farm. The best man with horses has generally very little to say to them, but when he does speak it is generally in the nature of directions which the horses know definitely.

There is no need of having sore shoulders. A sore shoulder is generally caused by a poorly-fitting collar or a too heavy or a too sudden pull on a green horse. The steady pull will not hurt.

Often perspiration running under the collar will cause scalding and to offset this it is often a good policy to wash the shoulders with warm water in which some salt is added, at the close of the day's work.

Use three or four-horse teams where at all possible. It makes the work easier and the driver gets the most out of the horses.

Seeds with a Lineage

Lovers of gardens and grounds should know that at Raynes Park, London, England, Messrs. James Carter & Co. have the finest and most complete testing and trial grounds in the world.

Their equipment and the unique methods employed guarantee the quality of their seeds. For generations they have been cultivating, selecting and perfecting until Carters Tested Seeds have reached the highest percentage of purity and germination.

In England, where the art of gardening is most highly developed. Carters Seeds rank first. Ask any gardener with experience in Great Britain—he will know Carter.

In Canada, Carters Seeds have achieved a tremendous success, both on large estates and in smaller gardens.

We import these seeds direct from Raynes Park and carry a complete stock at our Toronto warehouse. We issue an American Catalogue, with all prices in American money. It includes selected varieties of Flower and Vegetable Seeds, with valuable directions for planting and cultivation.

A copy of this Catalogue will be mailed you FREE. Write for it to-day.

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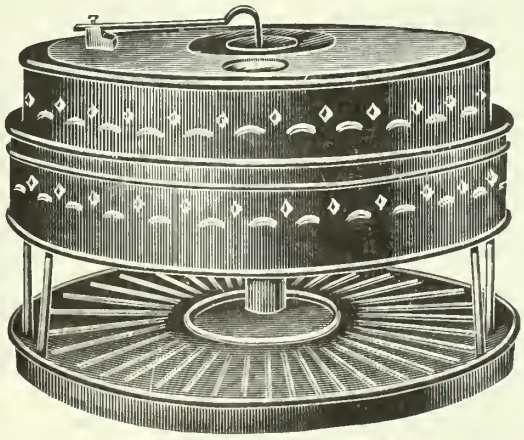

Hatches 50 Eggs—Price Only $7.00.

Every Egg a Chicken

This little machine puts profit in your poultry business—a little gem, a wonder. It hatches every hatchable egg—simplicity itself. Absolutely fireproof, easily operated Thermometer in sight. No need to touch the machine. Made entirely of metal, weight 20 lbs. A most practical cycle Incubator that is filling a need. All ready and securely boxed for shipment. **PRICE ONLY $7.00.** You'll be delighted and want several more of these after you've used one.

MAIL YOUR ORDER TO-DAY.
Further particulars and testimonials on request.

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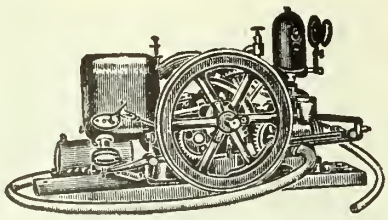
Protect your trees and garden



A Fairbanks-Morse Spraying Outfit offers you the most effective and economical means of destroying insects and of curing and preventing plant and tree diseases.

The spraying machine illustrated here can be used for practically every spray use on any farm, and will quickly pay for itself in improved crops.

You can buy a Fairbanks-Morse or Gould Spraying Pump, from a brass hand pump costing a few dollars up to an engine-operated, truck-mounted outfit of the highest efficiency.

Send for free catalogue of spraying outfits and appliances. It contains much valuable information, tells you what to spray, what chemical compounds to use, how to prepare them, when to do the spraying, etc. We are the largest Canadian dealers in farm engines, scales, and mechanical goods of every kind.

Address Dept 15

The Canadian Fairbanks - Morse Co., Limited

Montreal Toronto Quebec Ottawa St. John Hamilton Ft. William

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Canada's Departmental House for Mechanical Goods

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Thirty-three years of successful use has proven the value of Dr. E. E. Burnside's

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It has brought health to thousands and will help YOU. Nature intended you to be well and strong. Purifico works with Nature's curative forces for the elimination of disease. It purifies the blood—tones up and invigorates the entire system.

Purifico is not an experiment—not a cure-all, but it is a powerful compound of proven value in the treatment of all blood diseases.

Have you a rash on your face—it may be Eczema—

Mrs. S. O. Bailey was cured by Purifico.

The Purifico Co., Bridgeburg, Ont. Dixville, Que., June 13, 1912.

Gentlemen:—

I am pleased to tell you what Purifico has done for me. I have been suffering for a very long time with Eczema. This Spring I heard of this blood-medicine. I decided to try it. The itching is all gone and the sores are leaving. I can't find words to express my gratitude for what Purifico has done for me.

Mrs. S. O. Bailey.

We have hundreds of testimonials which have been freely given by grateful patients in order that we may show you what Purifico can accomplish. **Our booklet, "Evidence," containing more of these letters and other valuable information, is free. Write for it to-day.**

Address Mr. C. B. Diffin, General Manager
THE PURIFICO COMPANY OF CANADA, LIMITED
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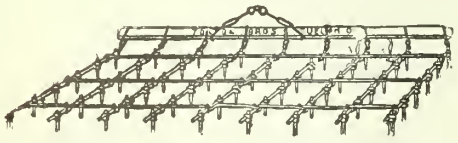
This Harrow Is Made for Hard Service

It is Tolton's Harrow—the harrow that gives entire satisfaction and long life service.

TOLTON'S SECTION AND FLEXIBLE ALL-STEEL HARROWS



are absolutely the strongest and most durable harrow manufactured. This is absolutely guaranteed.

Don't buy a harrow until you have made a careful examination for yourself of the many advantages Tolton's Harrows offer you. **Write us to-day.**

Address Dept. "M" **TOLTON BROS., LIMITED, GUELPH, ONTARIO**

Some Poultry Pointers

This is the hatching month for the average farm. The eggs of the large breeds should be set early in the month. Several weeks later will do for the lighter breeds.

When using hens, set several at one time so that the chicks will come in together, making it possible to double them up and so release some of the hens.

Even when using an incubator, it is a good policy to set several hens at the same time. It is the eggs under the hens which test fertile which may often be used in the incubator. Use lice powder while a hen is sitting.

Spade up the poultry yard as soon as the ground can be worked. The brooder must not be over-crowded and requires close watching. The actions of the chickens are the best indications as to the temperature.

See that your chicks have plenty of sunlight and fresh air. Often muslin can be substituted for glass in part of the windows.

Chickens that run with hens require the least attention but they should not be allowed to run in the wet grass in the early morning. Watch the chicks well for lice, using powder on their backs and a bit of grease on their head.

Before using an incubator a second time clean it thoroughly and expose it to the sun's rays.

Have a breaking-up coop for all brooding hens that are not wanted to be set.

Any person wishing to go into poultry can do no better than buy a few brooding hens and several settings of eggs from good stock and he will then grow up with the business.

Duck eggs should be set the first of the month.

The geese should be sitting not later than the middle of the month. If goose eggs are kept for three weeks they are very liable to become sterile. It is a good plan to set three under a hen if her ladyship, the goose, is not ready.

Get all the necessary wire screening ready for your yards. The brooder coops should also be thoroughly cleansed and overhauled for placing in the orchard or other lots when needed.

Those who are selling eggs for hatching must be particular with their matings, and more particular with the packing of the eggs for shipment. It never pays to send any doubtful ones. Build up a trade and reputation for honesty, accuracy, and reliability.

If you wish to make a specialty in the pure-bred poultry business, take a little time and breed a strain of bred-to-lay hens in any breed that you take a particular fancy to. there is no "best" breed in poultry.

In turkey-raising, this is a very particular month. The hen is very liable to steal her nest away and a close watch must be kept for predatory animals.

The Newest Big Business

(Continued from page 10.)

been done with flax and cabbages. This year a specialist from Illinois is coming to study the problem upon our land. He will be paid by the Empire Tobacco Company and will have the assistance of the Tobacco Branch of the Dominion Agricultural Department.''

Burley, cigar and snuff tobaccoes are grown upon the Walker Farm. The cold frames for the seedlings cover seven-eighths of an are, and there are 26 curing barns 100 feet to 150 feet long by 35 feet wide. From 40 to 100 men are employed upon this division.

The eighty-acre orchard is just three years old and the poultry plant is under construction. In short, every department that is handled on a mixed farm is operated here. It is not the largest farm in Canada, for it could be lost in a corner of the great Western grain and stock farms; but it is probably the largest mixed farm, and the best-paying farm per acre of its size in Canada, and is undoubtedly one of the best fertilized of any area.

A drive over the land convinces one of these facts. A person does not need to be told which land belongs to the big farm. The general condition and appearance of it tells the story.

A Chance for Young Men

''Why don't the smaller farmers keep their land in better shape?'' I asked. ''Are they making money?''

''Some of them are making a little, but many of them would be further ahead if they sold their land, put the money out at interest and worked by the day.

''Just look at their land over there! That is one reason why. They are trying to get something for nothing.

''That's why they don't make money. They haven't any method. They don't calculate. They have never studied farm management in their lives.''

And these facts stand for two great truths, that seem to become more clear all the time. In the first place the little men who won't think are going to be sold out some day and their land will be owned by large companies who will farm just like they manufacture shovels or flour. In the second place young fellows with an agricultural training and a love for the farm will not go to a city in the hope of some day becoming the manager of a large plant and a man of some importance. They will just fit themselves to manage a great farm plant in the country, where they will be just as important. And I wonder how many city managers there are in our cities to-day who started at the bottom twelve years ago, ''need not work any longer, if anything happens.''

KREOLITE BLOCK FLOORS

"The Best Floor it is Possible to Obtain."

Kreolite Block Floor in the Cow Barn of Walker Sons, Walkerville, Ont.

"Our Dairy Manager tells us," writes J. A. McDougall, Secretary of Walker Sons, "That so far as he can see, they make the best floor it is possible to obtain."

KREOLITE BLOCK FLOORS are best for you and best for your stock. They are easy under foot; soreness and brittleness of hoofs disappear. Giving a sure, safe foothold, they eliminate veterinary bills resulting from falls and strained tendons.

KREOLITE BLOCK FLOORS are naturally warmer than concrete or brick. Cows can lie on a Kreolite Block Floor in any season without danger of taking cold. Their udders are warm through the night, thus maintaining a high quality of milk.

KREOLITE BLOCK FLOORS are more than sanitary; they are strongly antiseptic and death to germs, protecting cattle from many diseases. These floors are an investment, not an expense. They pay big dividends in better health for your stock.

KREOLITE BLOCK FLOORS are made to last forever. They will not absorb moisture or acids, but grow tougher and better with hard wear and long service. Write to any owner of a Kreolite Floor and see what he thinks of it.

Write us for prices, giving rough estimate of floor area.

THE JENNISON-WRIGHT CO.

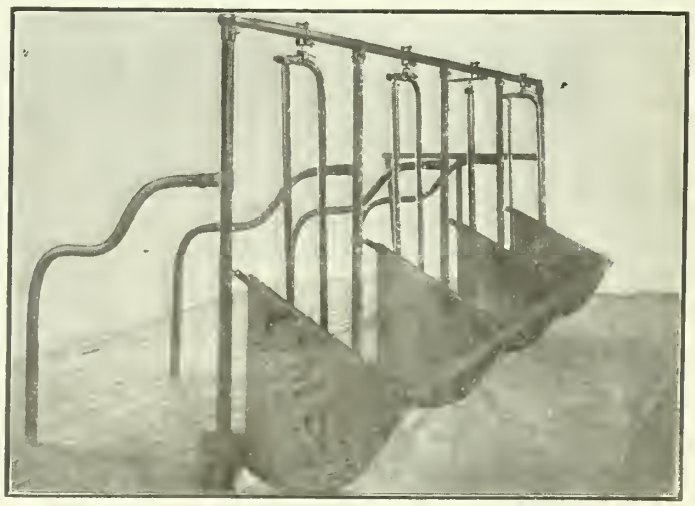
329 Huron Street - - - - - Toledo, Ohio

Fresh Air and Sunlight are Very Important to the Health of Stock

Chatham "All Steel" Stalls and Stanchions allow perfect circulation of fresh air and sunlight. Your cattle thrive amid the sanitary surroundings of the **Chatham** furnishings, and pay you a much larger percentage of profit.

Chatham "All Steel" Stalls and Mangers are simple in construction; offer every advantage of modern steel stalls at a small price.

If you are going to remodel or build, drop us a card to-day for our free catalogue "C," fully explaining these stalls and stanchions. Also our easy-lift Litter Carriers.



Chatham Malleable and Steel Mfg. Co.

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INSURE YOUR HORSES

against Death through Disease or Accident, Fire and Lightning. We issue the most liberal policies free from vexatious conditions and offer indisputable guarantee of solvency and square dealing.

We insure: Stallions, Track Horses, Draft Horses, In-Foal Mares, with or without insurance on the Foal; Cattle, Castration and Transit Risks, etc.

All Kinds of Animals Insurance

Write us for further information and address of nearest agent

The General Animals Insurance Company of Canada

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Electric-Welded Cow Ties

Tested and Inspected.

25% More Wear.

Sold by all Jobbers.

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Handled by leading Dealers.

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$75 REBUILT MANURE SPREADERS $75

Guaranteed as good as New. Only a few at this price.
Speak quick. We will send on THIRTY DAYS TRIAL for $75.00

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We also make good Huskers, Shellers, Grinders, Spreaders, Silo Fillers, Wood Saws, Wind Mills, Gasoline Engines.

Write today for free booklet descriptive of our various money and labor saving machines.

7% INVESTMENT Profit-Sharing

SERIES $100, $500 and $1000. TERMS 5 YEARS

Business at back of this investment, established 28 years. All or any part of investment may be withdrawn at any time after one year on 60 days' notice. Safe as any mortgage. Send for special folder.

NATIONAL SECURITIES CORPORATION COMPANY
CONFEDERATION LIFE BUILDING, TORONTO

Mark of the Golden Hoof

(Continued from page 12.)

be followed in selecting the individuals. We are not dealing here with the raising of breeding stock, but of sheep-raising in a commercial way. At the same time, when selecting the foundation for the flock, it is better to get pure-breds or good grades, conforming very well to breed type, rather than cross-breds or mongrels. It lends character and value to our lambs if they conform fairly well to some recognized breed type. Aside from breed type, there are certain characters we must have.

Pink Skin is Important

First, we want constitution. This is indicated by a good heart-girth, bright eye, wide muzzle and pink skin. This last, I regard as rather important. If we will part the wool so that we can see the skin, we will notice a decided difference in different sheep. Some will be decidedly bluish in tinge, while others are quite pink. We should avoid bluish or pale skins, and choose a good, pink skin, as indicating a good constitution and good circulation.

Then we must look for flesh-producing qualities. As the best meat is found along the back and loin, and in the hindquarters, we must look for a strong, broad back and loin, and for deep hindquarters, carrying the flesh well down toward the hock. In fact, the same general form which indicates meat form in the steer, also indicates it in the sheep. The general form should be blocky and square, with good top and underlines, not too long legs, and that general roundness and smoothness, as indicated by feeling the animal over, which shows quality in the sheep as well as in the steer.

The wool, though of minor importance, is still important, and we must see to it so far as we can that the sheep we are selecting to form our breeding flock, have reasonably good wool-producing characteristics.

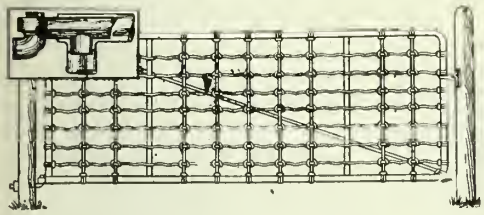
Housing the Farm Stock

Having selected our foundation stock the next thing to consider is the matter of shelter. Here the requirements of the sheep are cheap and simple. An open shed, facing the south, with, however, tight walls on the east, west and north, is all that is necessary. A dry place, free from draughts, is all that is needed. Cold, even intense cold, does not hurt the sheep, in fact, they never thrive better than in clear, dry, cold weather, as any feeder of lambs can tell. Money spent in making a warm sheep-pen is wasted. It is well to have the pen divided into at least two, or better three permanent divisions. We must have room for our breeding ewes in one compartment, for our fatting lambs and ewes (if we winter-fat) in another, and a third for the young ewe lambs we are keeping for breeding purposes. These

Invincible GATES

Absolutely Lead the World in Quality

Patents Applied For



Invincible Square Corner Gates, the latest and best development in the art of gate making. The corner portion of our gates is shown here in order to give some idea of this improvement. These corners are of special steel and are welded in solid in one-piece frame; this gives additional strength and enables the gate to swing easily on the posts. Invincible Gates are guaranteed not to sag, bend or twist out of shape. Supplied either painted or "hot galvanized."

Special Gates made to order promptly.

The Steel Company of Canada,
LIMITED
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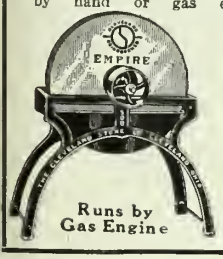
NO LOPSIDED STONES

Every CLEVELAND GRINDSTONE is absolutely even in hardness all through, and sharpens knives, axes, hoes and cutter-bar blades exactly right.
Made of the ONLY genuine Berea stone, finest in the world. Guaranteed to do satisfactory grinding, or your money back. We are the biggest grindstone makers in America. We have experts of 50 years' experience who select stones with the right grit for farm use. Let them select for you.

CLEVELAND Grindstones

Look at the fine stone shown below! It's the CLEVELAND "EMPIRE," a sturdy grinder to run by hand or gas engine. Ball-bearing. Strong frame and trough of cast iron that won't rust out. Genuine Berea stone, mounted on steel shaft, complete with 6-inch pulley. Will last a life-time. Write for our great booklet, "The Grit that Grinds," and we'll give you the name of our nearby dealer. It will save you money. Write to



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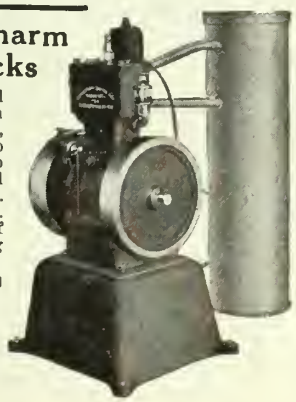
THE CLEVELAND STONE CO.
1109 Leader-News Bldg., CLEVELAND, OHIO

Runs like a charm —never bucks

This little engine will do your churning, run your cream separator, washing machine, pump your water, in fact, do all your hard work, and make work a pleasure. Anybody can run it. Nothing to get out of order. Only 3 working parts.

Send for catalogue and prices.



THE FOSS & HILL MACHINERY CO.
Montreal

latter, however, are often kept with the fatting lambs until such time as they are sold, and this is a very good practice, provided they are not made too fat for breeding. All pens must be plentifully supplied with racks for roughage and troughs for concentrates. It is better, of course, if there is also a water-supply at hand, though sheep are not particular as to this, but will do if they have access to water once a day, or even to plenty of clean snow.

Arrangement of Pens

In the matter of feed-racks, the combination rack and trough—rack for roughage above, and troughs for concentrates below, is probably the most satisfactory. These are made double, so that sheep may feed from both sides. Built into the pen in the right places, they will help to form the permanent divisions between the pens. One other thing is necessary in the pen—a number of small pens for ewes and their lambs at lambing season. These, of course, may be permanent divisions, but a cheap and convenient modern plan provides them in a movable form. Two light doors, five feet in length or two and a half or three feet high, are hinged together so that they may be closed up flat when not in use, or stored away, or opened to form two sides of a square. The outer edge of one of these doors is provided with a hook, for fastening, and the other with a flat strip, three inches wide nailed along its edge so that one edge projects on either side of the boards of the door. Beginning at one corner of the sheep-pen, at intervals of five feet, two 1¼-in. strips set 3½ inches apart and three feet long, are nailed to the wall in an upright position. Over the back of these, projecting nearly one inch over the space between the boards, one-inch strips are nailed. This forms a groove into which that end of the hinged doors having the flat strip nailed to it may be dropped. The other door is opened at right-angles to the first, the hook is fastened in a staple on the wall, and the first lamb-pen is complete. The second is formed in the same way, except that here the staple is on the hinged corner of the first pen. In this way so many pens as desired may be formed, and when not in use, may be removed and packed away in a very small space.

Points for the Sheep Raiser

While sheep do not take a great deal of attention there are certain points in their management which must not be neglected, if we would have success. In the first place, before turning the ram among the ewes in the fall, the latter should be "flushed." This is accomplished by keeping them during late summer or early fall on rather poor pastures, so that they may not be in high flesh. Then two or three weeks before the ram is admitted to the flock, they are put on good rape or clover pasture, and if these are not sufficient, a little oats or bran and oil-meal are fed. Thus the ewes are gaining flesh rapidly during the mating season, ensuring a high average number of lambs.

KEITH'S

Tested MANGEL, Turnip and Field Carrot

SEEDS

Did you ever figure out what it costs you in returns you do not get when root seed germinates poorly and leaves big empty spaces?

WHY NOT GET

KEITH'S TESTED SEEDS

for 1914, and be absolutely certain of live seeds and a perfect stand?

Keith's Prizetaker Mangel.

It is worth your while to sit down and order good, live, fresh seeds direct. Do not put off till seeding time, when you will have to go to the nearest store to get doubtful seed.

Our mangels and turnips are put up in 1-lb. cotton bags. There is nothing better to be got.

If you are ordering clover and timothy seed, seed grain or seed corn, your mangel and turnip seeds can go along with them at 5c per lb. less than prices herewith quoted.

Mangels.—Keith's Prizetaker, Danish Sludstrup (a new intermediate, very fine). Prices for both, postpaid, lb., 35c.; 5 lbs. or over at 30c.

Mangels.—Keith's Yellow Leviathan, Yellow Intermediate, Mammoth Long Red, Giant Half Sugar. Prices, postpaid, 30c.; 5 lbs. or over at 25c.

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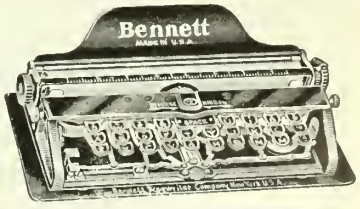

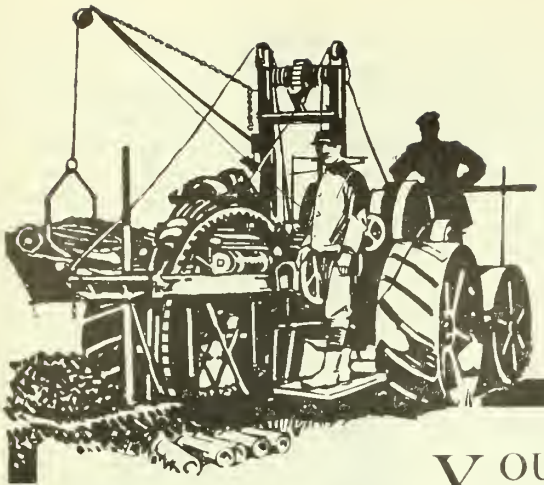

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During the winter, the breeding ewes should be fed so as to be kept in full vigor and fair flesh. Many make the mistake of not feeding well enough, and so, when the lambs arrive they are weak and puny, and the ewes are poorly supplied with milk for their offspring. Clover hay or pea-straw makes excellent roughage. If we are forced to feed timothy hay, which has a very constipating effect on the sheep, we will have to feed a fair amount of roots. Otherwise, it is well to feed roots very moderately. Too heavy feeding with roots is apt to produce big soft lambs, with little vitality. Toward spring, say a month before lambing time, it is better to discontinue the roots altogether, substituting a daily feed of bran and oil-meal. After lambing, of course, it is safe to feed very liberally of roots, and they will be found to be a splendid food for milk production.

At Lambing Time

At lambing time the shepherd must be most attentive. Of course, where there is only a farm flock of twenty-five to fifty ewes, it will not be found economical for the shepherd to be with the flock all the time, as is done in larger flocks. But last thing at night, and first thing in the morning, and several times during the day he must make his rounds. When a ewe lambs, it is well to put her and her new-born progeny in one of the small pens above described, by themselves. Otherwise there is likely to be trouble through ewes disowning their lambs, or getting them confused with the lambs of other ewes. We must see that the youngster has nourishment before he is many hours old, and while we are attending to this it is well to shear away all the wool on or surrounding the udder. If this is not done the lambs may have difficulty in finding the teat, and besides, through sucking small tufts of wool, they are liable to swallow enough wool to cause serious and sometimes fatal intestinal trouble.

At three or four weeks of age all lambs should be docked. To have all males, not intended for breeding purposes, castrated, would mean a big saving to our farmers.

The nursing ewes, until they go on the grass, should be fed liberally.

Shearing time varies according as we wash, or shear without washing. As to whether it pays to wash or not it is a debatable question, which I will not attempt to decide, though my own opinion is that the extra price received for the wool is more than sufficient to pay for the trouble, while the washing is undoubtedly good for the sheep. If we wash, a week should elapse before shearing, not only that the fleece may be thoroughly dry, but also to allow the "yolk" or oil to get back into the wool.

We Must Dip Sheep

An attention that must be given if we are to have good results, is "dipping." Sheep like most other things have their parasites, and it is practically impossible to raise a good crop of lambs and a bumper crop of "ticks" at the

same time. In my experience with a farm flock, just after shearing is the most effective time to dip. Any good sheep-dip or ordinary creolin is effective. With the fleece as it is shorn from the sheep, most of the ticks and practically all the eggs are removed. If after this the sheep and lambs are well dipped, we get practically free of the pests, and the flock remains free during the summer while they are on the pastures. In the late fall when they are again brought into the fold, it is generally too cold for any insects which have summered in the pen, to show any activity, and so one dipping keeps the flock clean for the year. Where there is no proper dipping-tank, the ewes may be stood on their feet in a large tub partly filled with the mixture of dip, and while an attendant holds them, the shepherd with a brush or sponge washes them. The lambs are easily dipped in a barrel. Enough dip is supplied to submerge the lamb all but his face. The attendant lowers the lamb into this, holding him by the front legs, while the shepherd holds his head above the water. After submersion the attendant slowly draws him out, while the shepherd with his hands squeezes the surplus water out of the wool. Dipping, in one form or another is exceedingly necessary, not only to keep the flock clear of ticks, but also of skin disease, of which the most prevalent form is scab or mange.

Change Pastures Often

During the months when they are on pasture care should be taken, if they are confined in small fields, to change them often from one field to another, as pasture very soon becomes "stale" to them, and then they do not do so well. Of course, if they have a large run this is not necessary, nor is it when they are on rape or clover in the fall, when frequent rains serve to freshen the forage. In September the lambs are weaned, and if possible are confined in a field far enough from the ewes to ensure that the two flocks cannot hear each other. At this time another little attention is required. The ewes must be gone over two or three times at intervals of a couple of days, and where there is any quantity of milk it must be drawn out by hand. Failure to do this often results in caked udders and ruined ewes. At the same time it is advisable to separate from the flocks all defective or old ewes to be sold as occasion offers. It is not wise to keep a sheep over six years, nor to breed lambs in their first year.

I have tried to outline some of the simple rules which I have learned in handling a farm flock in a commercial way during a number of years. I have told no more than is necessary to success, and to carry it all out will occupy but little time. My observation teaches me that many of these simple matters will be quite new to most sheep-owners in Canada. These are the men who complain that sheep "do not pay," and who are going out of them. If we will treat our sheep as intelligently as we treat other lines of livestock, we would not

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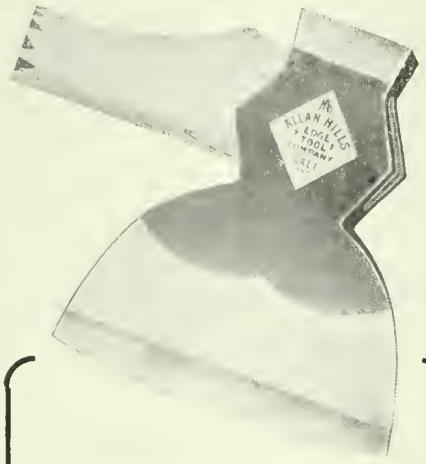

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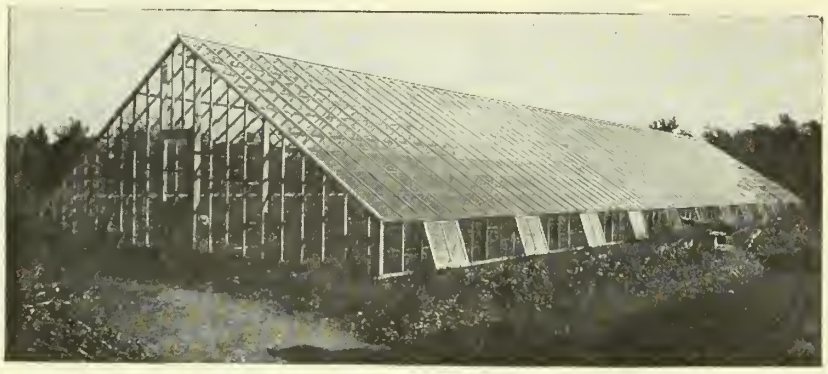

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Build one of our greenhouses, one of our thoroughly practical kinds with no fuss and frills, simply a straightaway, thoroughly well-built, enduring glass enclosure for your garden. Then raise lettuce, tomatoes, cucumbers or strawberries. You will find no difficulty to market them and the price average will net you a nice, snug profit each year. Get a good man for your foreman, then in the winter keep on your regular summer force in the greenhouse. By doing this, you can keep your good men all the year round, and go a long way toward solving your labor problem. Incidentally you will make money. Let us go into all sides of the question with you.

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make this complaint. There is no reason why these beautiful and useful creatures should not be kept on every farm, adding to our revenues, keeping down weeds, enriching our soil, and forming a mainstay of agriculture, as they do in the Old Land.

THE AFTER HOUR

By MARGUERITE C. B. WILKINSON

"What is your gift?" the Angel asked,
  "Ye who have spent your days—"
One offered him, with answering shout,
  A little wreath of praise,
And cried, "Behold! I made men glad
  With potent roundelays."

Another showed a raiment rich
  In that great after hour,
And said, "I disciplined the race,
  I bent them to my power
I ruled—they served God well, through me
  And wrought for me my dower."

A third of gentler mien and gait
  Made answer languidly—
"I used my wealth for culture's sake
  More beautiful to be—
Naught have I but a polished joy—
  Smooth offering to thee."

The Angel threaded ranks of souls
  With eyes of finest fire—
"What else, ye children of new life,
  New hope and new desire,
What else is brought me from dead days
  To wake my living lyre?"

A murmur of dumb anguish sped
  Through those wide ranks unblest,
And then a woman sere and sad
  Made answer for the rest,
"Little we have to offer thee,
  And much to be confessed!

"Behold us soiled and pitiful,
  And hunger-stung and mean
And know the labor of our days
  Was but to keep life clean,
To fashion children of flesh,
  To toil unheard, unseen.

"To till the field, to swing the crane,
  To guard the switch at night,
With briefest rest to soften care,
  And with the first grey light
Rough-handed to begin again,
  An old and ugly fight.

"We were not spared for any dream
  Of a diviner deed;
Our strength was spent ere it was given
  To meet love's present need—
Into this life we bring no gift
  But hearts and hands that bleed."

With one hot glance of joy and pride
  The angel shouted, "Lo!
It is a gift of mighty worth
  Albeit ye did not know—
And God Himself no greater gift
  Than such strong love can show!"

—*The Craftsman.*

THOUSANDS of people are suffering from chronic ailments just because they neglected to treat them at the start. At this time of the year, danger of exposure is most prevalent. Unexpected exposure and muscle overstrain, if not attended to at once, lead to painful results, sometimes never to be got rid of. Here is one of the most trying features of farm life. Often the neglect means torturing pains in the muscles and serious discomfort, which interfere with the duties of the farm and household at most critical times. Most cases of painful muscular rheumatism can be traced back to neglect. It is a most trying experience to find oneself helpless to relieve the pain. Why run the risk of serious trouble when a bottle of Dr. Thomas' Eclectric Oil can be kept always on the shelf at a trifling cost—ready the moment it is needed to relieve and prevent serious results and needless pain? Dr. Thomas' Eclectric Oil, well rubbed in, goes instantly to the very seat of the trouble. The quick relief experienced is surprising, the pain disappears and the sore and inflamed muscles become pliant without loss of strength. Here is one of the best known means of securing quick and satisfying relief.

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Prepared only by

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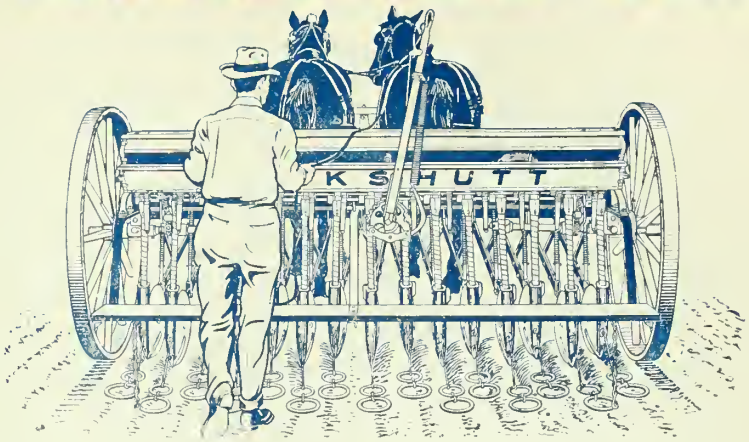

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THE FARMER'S MAGAZINE

May 1914

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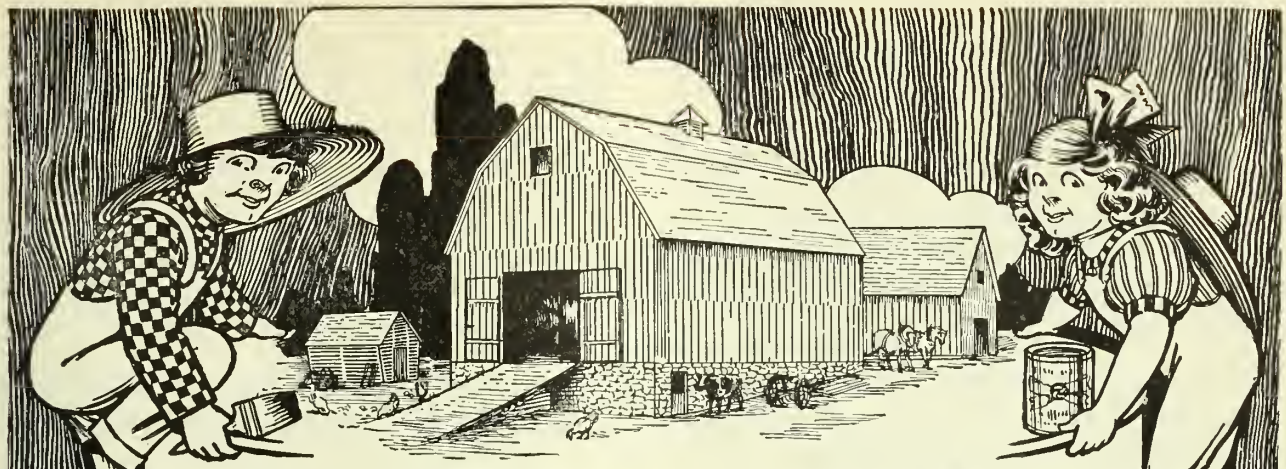

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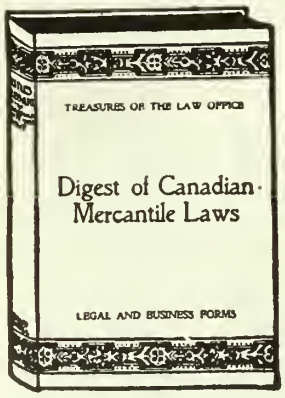

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FARMER'S MAGAZINE

JOHN BAYNE MACLEAN, President
JOSEPH McGOEY, B.A., Manager
MILLER McKNIGHT, Adv. Manager

MAY, 1914

F. M. CHAPMAN, B.A., Man. Editor
ETHEL M. CHAPMAN, Assoc. Editor
J. I. CODDINGTON, Ph.B., Cir. Manager

THE EDITOR'S TALK

Several good suggestions have come in from our readers. One is that all Farmer's Magazines be kept on file in the farmer's office for reference in the future. Another is that the conclusive and authoritative nature of the articles warrants the subscription of every farmer in Canada, no matter how many journals he may be taking.

Farmer's Magazine must be on his table at any cost. These opinions are encouraging to the Editors. The greater helpfulness that comes to the Publishers by reason of increased subscriptions, returns to the reader in increased service, and greater values in articles, illustrations, and cover designs.

Cover designs do not make a magazine, we are fully aware, but when the cover design is in a class by itself in farm papers, on top of such meaty articles as appear in Farmer's each issue, it commands the admiration of every reasonable reader. That we have given farm journalism a distinctive uplift must be admitted by all. And we rejoice at the large number of renewals and favorable opinions which confirm to us, these estimates. The farm and the farmer's work, we believe, are second to none in importance in Canada. Our magazine must then uphold our views and dignify the literature for the farm.

In June there is a splendid outlook for the reader. Several unusually interesting articles are being prepared.

Cataloes—the new beef animal will help to solve the beef question. You will want to know all about this experiment.

Electricity as applied to the farm, will form another well illustrated article by a popular writer.

Land O' Gold, begun in this number will be continueed. Carefully read this farm romance and let us know how you like it. It is something entirely unsual in farm literature in Canada. The old homestead is revitalized

Sheep shearing times in Australia, Hop-Raising in British Columbia, Grasses for Cattle Pastures, Co-operative Work, Late Crop Ideas, Broilers for the Home Trade, are a few more of the subjects treated.

Farmer's is always a little better than you expect.

Write the editor about the crops and prospects in your district for our special reports.

THE FARMER'S MAGAZINE.

Winnipeg, Toronto, Montreal, and other offices.

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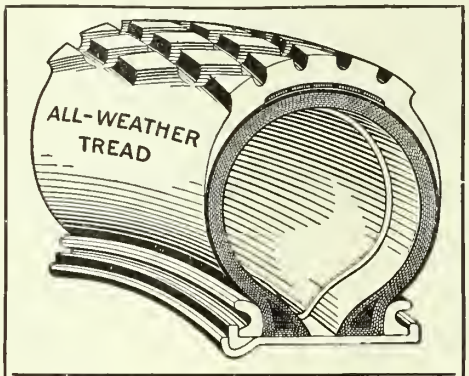

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The FARMER'S MAGAZINE

Vol. VII TORONTO, MAY 1914 No. 7

The Prairie Pioneer

Planting a Household on a Lonely Prairie Stretch in the Mackenzie Basin is a Big Man's Job

By W. D. ALBRIGHT

The farm pioneer is generally a splendid type of person. In the first place, it takes real courage and initiative to strike out into unknown places. A healthy faith in the future betokens a man with something in him, and his very going is the evidence of things hoped for, in the development of agricultural canaans. A trek of big men has been going on to the Peace River country and this year will find many a new trail begun and the smoke of many cabins marking new horizons. In this article the writer, formerly foremost in Ontario farm journalism, finds an ideal life in the pioneering of Grande Prairie. His story is intensely human. The joys of the open air blow in upon us as we follow him in his descriptions. The empire of the Peace River is not over-estimated. A good type of Canadian will be the generation of to-morrow and prosperous homes will spring up there to feed a hungry people in urban America.

"I AM the land that listens, I am the land that broods,
Steeped in eternal beauty, crystalline waters and woods.
I wait for those who will win me—and I will not be won in a day;
And I will not be won by weaklings, subtle and suave and mild;
But by men with the hearts of Vikings, and the simple faith of a child."
—*Service.*

Suppose you were planted down on a stretch of prairie forty miles from the nearest river or other important landmark. To reach your homestead you had driven fifty miles past the last settlement or trading post over a sinuous trail that followed the humor of the pack-pony or bull team that marked it out. Eight or ten miles from the end of the journey you had turned from this friendly highway and struck off across the humpy surface of the virgin prairie, winding around sloughs and poplar bluffs and dodging the ant-hills which stud the plain as thick as haycocks in a June meadow and nearly a third as large. A forenoon's ride from the trail you pulled up on your own homestead with family and all the worldly goods you would be able to lay down here for months. You strike camp, turn the oxen loose to rustle for themselves, build a fire, fry some bacon, beans and potatoes, and with this and a few slices of bread or bannock, eat dinner at home—alone in the wilderness.

Not altogether alone. Four miles to the west is the shack of a Norwegian settler. A Montana man is understood to have filed on a quarter of the second section north. A Saskatchewan pioneer has located scrip on the third section east, with an Ontario farmer homesteaded near him, while a young-married English couple are supposed to be filing some distance south-east. None of them are in sight. The Norwegian's shack is the only evidence of settlement within a radius of six miles. Indian hunters and trappers have roamed these solitudes, but left no sign of their presence. Not so the surveyors. Fortunately, they have already been through and four square holes in the ground with an iron stake set in a mound in the centre of the space thus marked out denotes the corner of your homestead. On the stake you read in Roman numerals in vertical arrangement, VI.—LXXII.—IX., which being interpreted means that the six hundred and forty acres lying to the south and west of this stake is officially on record as Section 6 of Township 72, Range 9. A township corner stake would convey some additional information. The section corner stakes are at the north-east corners of the sections, and planted flat face to the section designated. In addition there will be other stakes around the square mile marking off the quarter sections of one hundred and sixty acres each. So here you find the quarter section on which some months ago you had filed at the land office two hundred miles away, paying the ten-dollar homestead entry fee for a hundred and sixty acres of the cheapest land on earth.

Cheapest in cash, I mean. It will be fairly

A homesteader's transportation outfit in the district where it is possible to get 160 acres of free land in one of the richest farming countries of the world.

well earned by labor and privation before you read on a patent certificate, "This is to certify that John Doe is the owner in fee simple of one hundred and sixty acres of land, being, etc." Many a long day will pass in a lonely shack ere the three years' residence duties have been performed and the necessary breaking and building accomplished to "prove up." Bread without butter and sour-dough pancakes with melted sugar for syrup become rather monotonous in time. A one-room shack in the open with the winter wind howling outside, with a very scanty supply of reading matter and only an occasional caller or trip to the post-office to interrupt the tedium will make you wonder many a time whether this homesteading business is all it is cracked up to be. Homesteading in-a-sparsely settled district has its rugged and its strenuous side, with some heart-breaking moments, but in the end it well rewards the plucky man of limited means, for after three years he finds himself possessed of a good farm, worth upwards of ten dollars an acre and much more if he cares to hold it until the railroad comes through.

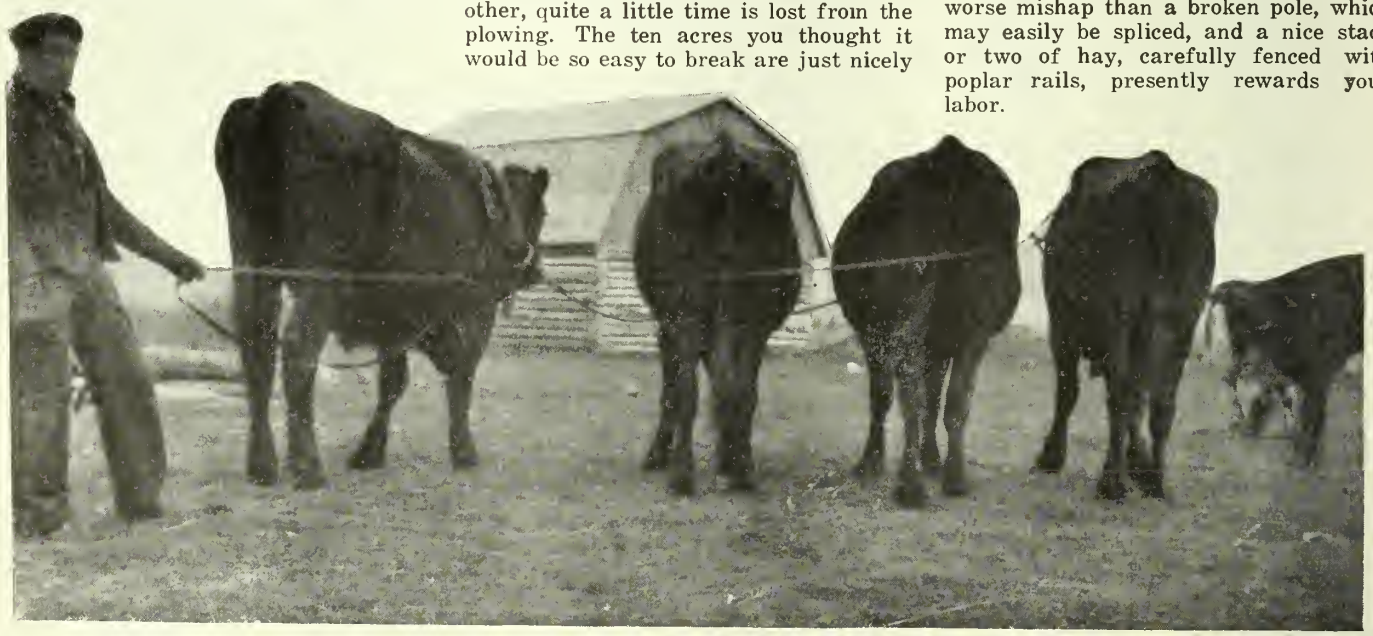
You arrive at your own homestead with all the worldly goods you will have to lay down here for months.

Tenting in June

But this is reverie. Dinner is over and immediate tasks confront you. It is June now and a tent is comfortable. It will serve until you can get some breaking done. The homestead regulations say that a settler residing on his homestead is required to break a total of at least thirty acres, of which twenty must be cropped, before applying for patent and that a reasonable proportion of the cultivation duties must be done during each year. You select a good-sized patch of open prairie where a considerable area may be inclosed with a minimum of fencing, for it is an unorganized district and there is no herd law. It is a free-range country yet, and the crop to be put in next year must be fenced or all the range stock in the country will be pasturing upon your grain. You get out the heavy-beamed breaking plow, make a big evener out of a poplar log and hitch three or four oxen abreast, if you have them, for the prairie sod is tough and the red-willow and saskatoon roots tougher, often holding four "bulls." Indeed the red willows generally have to be dug out root and branch and if incautious enough to choose a quarter with much willow on it you realize you have a "government job" on hand. If the prairie is fairly clear of scrub and stones you proceed to blacken the earth at the rate of about an acre and a quarter a day, plowing only two or three inches deep, as a rule. Not every day is a full one. Rain interrupts the work. Mosquitoes become so thick and troublesome at times that one is forced to stop. If not mosquitoes it is flying ants, which are worse, causing even Indians to seek cover. These, however, are but occasional; the mosquitoes are with you for months. "What is the least pleasant season up here?" I asked a Peace River settler. "Mosquito season," was the laconic reply. The size of these insects is by all accounts something remarkable and it is a familiar pun that they sit on the trees and bark.

Sometimes the oxen stray and half a forenoon is lost hunting and bringing them back. Tired of carrying wood in armfuls, you take a day off and "rustle" some with the team. One way or another, quite a little time is lost from the plowing. The ten acres you thought it would be so easy to break are just nicely accomplished and lucky you think yourself at that. It has been strenuous work, requiring every ounce of muscle and nerve force at your command. Driving oxen is notoriously trying on the temper. They are provokingly slow, especially when tired, and nearly every team has at least one "ornery" ox, which constitutionally prefers his own way to that of the driver. He swings out to the left. "Gee" you call, but he doesn't gee. "Whoa, get up," but he stands for the last call. It is exasperating enough, at best. At the worst, when the plow strikes a nest of stones or a patch of saskatoon roots, it is beyond ordinary endurance, and a string of profanity as long as the furrow is liable to ensue.

August brings haying. Lucky if a mower has been part of the equipment or that of a neighbor not more than ten miles away. Otherwise a scythe must be used to secure forage for the long winter. If the summer has been wet, the sweet, rich, upland grasses, mingled with vetch and peavine, may be long enough to cut. Failing here, we must go to the sloughs. Ant-hills, bumps of trodden earth, sticks and stones await the mower bar, but a special Providence watches over mowers in these new countries and the chances are good that you come through with no worse mishap than a broken pole, which may easily be spliced, and a nice stack or two of hay, carefully fenced with poplar rails, presently rewards your labor.



You hitch three or four oxen abreast if you have them.

Building a Shack and Stable

Chilling nights and shortening days now warn the newcomer that winter is to come. A shack and a stable must be built. In some parts of the West these will be of turf stacked against a skeleton framework of poles. In the Peace River district they may be nearly always of logs. Spruce groves occur in many sections and the homesteader who lacks building material on his own quarter is entitled to cut on Crown land three thousand running feet of logs measuring not over twelve inches in diameter at the butt. If spruce is too far away, or otherwise inaccessible, the prevalent poplar will probably be taken from a neighboring bluff, and, by the help of an ax and perhaps a broadax, laid up into a 12x15-foot shack with a roof of sods on close-laid poles, which extend from eave to peak and are supported by five peeled roof logs running the length of the building with a liberal cornice projection at each end. A saddle-notched, square-hewed or dove-tailed corner may be laid. The former is the easiest for a novice but the latter looks best. The gradual substitution of the square-hewed for the saddle-notched, and of the dove-tailed for the square may mark the evolution of log-house architecture in a new settlement.

It is a harder and longer job than one might imagine putting up even a small log house with a single pair of hands, but at last it is erected and the larger openings chinked with pieces of wood. It must still be mudded. This consists in pasting the crevices between the logs from inside as well as out with a prepared mixture of sand and ordinary earth. For barns and out-buildings, pure cattle manure is often used instead. At length the house and stable are completed, the latter finished with a flat roof, sodded over like the house and perhaps covered with a couple of feet of coarse slough hay. It remains to plow a fireguard and bank up the house with earth to a height of two or three feet, construct a few interior fittings and possibly dig a small blind cellar underneath the shack. Water may be obtained from a spring if the homestead boasts one; from a running stream or lake or quite possibly from a very brackish slough. After winter sets in it will not improbably be necessary to melt snow, and this may have to be continued for a few years until the settler can manage to dig or bore a well. Happy the homesteader's family if they are able to move into their shack and to stable their stock before the November cold spell, which appears to be one of the pronounced features of the generally excellent Peace River winter. Not all are so fortunate. Friends in Grande Prairie have described to me how the first winter after their arrival they lived in tents until after Christmas. Yet they suffered no injury and not as much inconvenience as might be fancied.

The opening of a new street in Mirror Landing, now Port Cornwall, at the junction of the Little Slave and Athabasca Rivers.

Whiffletrees Out of Popular

Every settler must become a Shaganappi craftsman. Men who have never hewed to a line make shift at dressing the logs and building or helping to build the corners of their houses. Tables, benches and bedsteads are knocked together with greater or less attempt at neatness and finish. Coal oil comes into the North country in rectangular box-cases containing two square-topped cans in each wooden case. The cases when empty serve as bushel boxes. The empty cans with tops knocked out and stiffening cleats tacked on two sides to the upper edge, make very good buckets. When coal oil and candles are exhausted a tallow dip may be made by twisting a bit of rag and laying it in melted grease which is allowed to cool before lighting the improvised wick. Broken harness is cobbled up. A bull may be hitched in with a horse for plowing or one may have two horses and two bulls hooked together. Tired of drawing his sleigh and freight rack everywhere he goes, the settler decides to construct a cutter. He may do this by making a box to set on the front bob of his sleigh, fastening it in place with the king bolt, supplemented by some wire. Or again he may build a cutter from the ground up, using natural-curved sticks for runners with the rave of the bench supported by several pairs of round spindles and a birch pole for a tongue. Crudeness will pass, but strength is demanded. He may even make a buckboard out of material at hand, though this is not so likely to be attempted. In time he will manage to buy or "make a dicker" for one. Most things come to those who wait—long enough.

Necessity knows no law except invention. What would a Southern Ontario farmer think of a new hired man who brought him a piece of spruce or poplar to make a whiffletree or reach? With what contemptuous scorn would he order the fellow to throw away such matchwood! But what would he do in the North where nothing better was to be had, unless it might be birch, which so often proves bad at the heart? He would have to use the poplar and if he made it extra thick, might be surprised to find how long it would last if used with reasonable care.

And what of fuel? In this respect the Peace River settler is not at all badly off. Apart from the coal which outcrops in certain localities, poplar is the great standby and white poplar makes excellent burning. It is much better than spruce for kindling and appears to give out more heat than soft maple. For lighting fires in the open a dry piece of willow is the best of all, but for general use indoors the housewife is well content with good poplar. In burning, it gives off a certain distinctive aroma, which, though marked, is not really unpleasant. Delightful enough of a frosty morning is the pungent smoke of the poplar fuel as it pours from the chimney pipe.

Trailing for Bread

After Christmas the settler makes a trip over the trail for supplies. It may

A street scene in Port Cornwall. The Grand Rapids are shown to the right.

Settlement on the frontier northwest of Edmonton. Thousands are going into this great new country—the last West on earth.

be anything from sixty to six hundred miles and back again. Meanwhile, wife and family are left perhaps five miles from a neighbor and two hundred from a doctor. Curious Beaver Indians, singly or in pairs, may cross his threshold unceremoniously to the disconcerting of the family. They will stand or sit around staring in their stolid way at whatever may be new. A year hence they will have forsaken the district for parts unmolested by the white man, but as yet they have not departed. They will do no harm to person or property. Their ethics of ownership are better than those of the white brother. A cache of utensils, food or clothing is safe in these new regions until the white population becomes numerous. Afterwards it is not. Even were the Indian's ethics defective his fear of the Mounted Police would pretty well insure the settler's safety. The control of the police is a real and positive force in the Canadian wilderness. Thanks to it, the Peace River region is still one of the most law-abiding countries on the face of the earth. American settlers marvel at it and are grateful. One of them said to me lately, "Down in Montana, thefts were made, women violated, murder committed, and little seemed to be made of it. Up here that kind of thing is seldom heard of. It is a safe and well governed country." I hope to every reader those words will bring the glow of satisfaction they did to me.

Yes, the settler's family will be safe, and in all probability free from serious illness. But still one never knows, and many an anxious hour will be passed in the lonely shack during absence of husband and father. His own experiences on the trail will be many and various. Aboard a fourteen-foot freight rack loaded with bales of hay and sacks of grain or some oat sheaves, and a well-filled grub box, he sets out in January. Severe weather is liable to be encountered on the way out. Fifty, sixty or seventy degrees below zero may be registered in the January cold snap, which, like the less extreme one in November, appears to be a regular feature of our winters in the North. Sometimes during one of the coldest nights it will happen that the freighter will have to camp out from failing to reach a stopping place. On these cold days the sleigh runners screech and drag as if pulled through beach sand. Added to this, the trail will frequently be drifted full, making hard going. Break-neck hills with springs spreading sheets of ice across them endanger team and load. Doubling teams will often be necessary and sometimes trebling or quadrupling. In places two or three rough locks will be needed on each sleigh.

Arrived at Edson, Edmonton, Athabasca Landing, Smith or some other outfitting point, the settler finds himself under the necessity of meeting five or six hundred dollars' worth of wants with eighty or a hundred dollars of cash. By a process of rigid elimination, he confines himself to a few of the most needful articles and starts back on the long journey home. Much milder weather prevails now for it is February or March, and the ascending sun is daily gaining in power and length of days, melting the snow in the open places and soon making the hardest hills bare. Big rivers are to be traversed or crossed. Sometimes they remain frozen until early May; sometimes they break up in March. Many an anxious moment is experienced at home as well as on the trail as the strong Chinook wind carries off the snow. Every year a number of tardy teamsters are stranded when the break-up comes. It would still be so if the winter lasted till June. Stragglers we have always with us.

Oxen are best for the trail as well as for breaking and logging. They are slow but exceptionally sure and on the long trips with heavy loads they are not so very much slower than horses either. As a neighbor remarked to me the other day, "By the time I get out to Edson or the Landing I am almost out of patience with my bulls; but by the time I get back I feel like saying, 'You good, faithful brutes.'" Many an ox-team has hauled three tons of freight from Athabasca Landing to Grande Prairie—a distance of well on to four hundred miles.

At last our settler is home, his oxen thinner and tired, but hard and usually in good fit for spring work unless the trip has been unusually severe. A few pairs of boots and articles of clothing for the family, some bacon, flour, evaporated fruit and other groceries comprise the bulk of the load. Perhaps he has contrived to finance a much-needed plow, drill or mower. Next winter he may bring a disk harrow, the great stand-by for working up the tough prairie sod. On the route home some seed oats and possibly a bag of wheat or barley has been picked up from a settler who has already been in the country long enough to have gotten a start in cropping. Maybe the load includes half a dozen chickens, godsend that they are in a new country. So the pioneer's stock of property accumulates and soon grows into value about him.

The trek of the trail is romance for a novelist. During the winter just past I have been living along the main route by which settlers north-bound pass through Grande Prairie on their way to the newer settlement of Pouce Coupee, sixty miles north-west of us. Day after day from January to March we have seen the teams stream by, sometimes as many as twenty a day. All manner of goods and provisions make up the loads. Most of the settlers going into Pouce Coupee have horses—some very good ones too. One had chickens, turkeys and geese. On one load were half a dozen crimson-combed Buff Wyandottes serenely pecking away at some grain strewn on the top of the wagon cover. For them home was where the feed was. They had no notion of flying off into a snow bank. Perhaps they had tried it and learned their lesson.

The great majority of the settlers this winter have one sleigh in the outfit covered with canvas, forming a moving tent. Here the members of the party eat and sleep in perfect comfort. A neighbor,

Continued on Page 83.

A general view of the rapidly-growing town of Grouard, at the head of the Lesser Slave Lake.

Land O'Gold:

By JUSTUS MILLER
Illustrated by MISS MARY V. HUNTER

A Romance that Finds Farming a Dignified Profession for a Young Man

The author, Justus Miller.

Do you believe in the life in the open? Are you seized with the real value of a modern farm outlook? Do you advise your boys and girls to grow bigger, nobler and ministerially expert to mankind? If so, you will enjoy to the full this splendid story by Justus Miller, a writer already familiar to readers of "Farmer's Magazine."

As a writer must feel the experiences of his characters, in order to delineate them faithfully, we have the practical life of the young author on the farm and in the office, as a guarantee that no fanciful creations obtain an undue prominence in his philosophy.

The story hinges around a young farm lad, who sees his old home, Land O' Gold, being eaten away by a mortgage, and who resolves to forever get away from such conditions. Like Banquo's ghost the problems of bread and butter, of mind over matter, of ideals over defeat, constantly obtrude upon him in whatever course he takes. He tries newspaper work, then departmental work at $1,500 a year, and meets a sensible girl. Thus the romance of life begins, that ends in a happy denouement. Land O' Gold again looms up on the horizon, in a way that will inspire every one.

Every farmer, man or women, school teacher or pupil, will enjoy the series which will continue serially. The healthiness of the narrative will be as wine in the veins of those whose souls see real life from the mountain-tops of morning as they overlook the varied life processes of the little world on the farm.—Editor.

THIS was what they named the old farm many years ago. It was so long ago that I cannot remember very clearly all the circumstances. But when Daddy took us there he had dreams of gold sure enough. He had crossed the great watershed of life where the streams all run down toward the west; and he had never farmed before. He had read of the wonderful opportunities that strewed the pathway of the agriculturist, however, and he went with a merry heart.

I was a young lad then with visions of horses and hay-mows chasing themselves through my brain, and my sister Molly was a very little girl with extremely large hair-ribbons. My mother was as innocent of country life ideas as were we, but she thought the farm would be an excellent place upon which to raise her kiddies. So it was. There is no place like the open country to unfold the budding life of a child. That is why this story is written now.

But Dad never made the gold. Vanished his illusions and his money. Heedlessly, he had entered into a work that more than any other demands business acumen and trained skill. Naturally the farm didn't pan out. As long ago almost as I can remember he had become convinced that farming was the hardest work with the poorest pay on earth. And he was never able to figure out just exactly why it should be so.

"I would consider myself a rank failure," said Dad one June evening, "if the majority of the neighbors were not exactly in the same boat. Just look right down this concession line. There's Bill Mason with a mortgage on his place and Hank Brown and Charlie Marshall fixed in the same way. Jack Mitchell is all right, but his father left him a farm clear of debt, and even his boy had to drop out of college last year to gather up finances.

"It's the same all the way along the line. A few of the boys have made money and a few have gone broke entirely, but the majority have just made a living and are paying for their places very slowly. And they and their families have had to work mighty hard at that.

"It isn't all a question of money either. There isn't such a thing as true recreation. We aren't as well off in that respect as were the old pioneers, judging by the tales that are handed down. We haven't any real neighbors—every one is too busy to be neighborly. It's just a question of work, work—eternally work.

"I'm not saying that farming under ideal conditions wouldn't be an ideal life. Perhaps the fact that your mother and I spent most of our lives away from a farm has spoiled us. But I do know that we've lost money on this place and I'm too old now to make a shift. I wish some of the fellows who sit in comfortable offices and write about the beauty and dignity of farming would try it awhile themselves."

I did not dispute these arguments. I had grown weary of a losing fight against hard work and high interest. So on my nineteenth birthday I struck.

I had no definite plans but rather turned to newspaper work. No one seemed to require me just them, so I thought banking would serve my turn. The local banks were full-up, but I had an opportunity to clerk in a store at five dollars per. Five a week didn't appeal to me and I decided to continue looking around.

Of course, I was not fitted to do any one thing well. Then, too, I wanted to start near the big money right away. A dim impression of these facts began soon to seep into my brain fissures, and I sat down one day to think it over.

"By Jove! it's an education I need." I remarked to myself at last.

This bit of wisdom so impressed me that I sold my shot-gun for fifty dollars.

The Lumber King was a queer case right enough. Stern and brusque in manner, he had a forbidding personality.

I had seventy-five already. Then I pooled my wealth and registered at the Ontario Agricultural College in Guelph on September 15th.

I still vowed never to farm. But the College offered good positions to its graduates, and the matriculation wasn't required at entrance. Above all the course was cheap. Like a sponge I had absorbed the hundred-dollar-a-year fable in the College calendar.

But I am not going to tell you a tale of College life. I have a live story to narrate of how I took the licks fate handed across.

After three years of College life my finances blew up. I saw clearly I must drop out a year to catch up. The next week I was called into the president's office.

"Hello Jackson," greeted the doctor, "Here's a letter that may interest you.

"This Ottawa publishing firm is after an agricultural editor. You should make good at that. Better drop out a year anyway. Too many of you fellows are graduated from here green. You require a little ripening. What is your pleasure in the matter?"

My pleasure! I was tickled to death. I had won the English scholarships and considered myself a dark horse at the newspaper game.

"Here's where I get on my feet," I promised myself. "Jimmie, my boy, you're getting on."

After the spring exams., I visited Land o' Gold for a few days. I kissed the Mater good-by and promised great things to Molly.

"I think you have something in you, lad," said Dad the day I left, "but let me warn you of two things. Remember, boy, that a swelled head pulls a man down faster than four men's ability can build him up. Never fear your enemies for they will fight against you anyway. But when your friends throw you down you always stay there—and a swelled head ruins friendship.

"Above all, keep straight. You will meet vice in all its forms in Ottawa; but I am not sorry you're going. A man in a walled house will never be strong. He must fight every inch for his strength. And I have faith enough in your integrity to trust you. But if you do slip don't think the cause is lost. You know, boy, we all fall sometime, somehow. Every man that ever lived has fallen in some way. Just come right back with a strong arm and with red blood and I shall always be proud of you.

"I'm sorry, son, to see you go. You've worked hard down here until you and I have become comrades. You'll grow away from us now, but don't forget poor old Land o' Gold. And remember, come well, come ill, your mother will pray every night for you and everything we have is yours to the last cent if you need it."

Poor old Daddy! That speech cost him much thought. His shadow has dimmed these many years, but it serves very largely as my philosophy of life yet.

I left him standing on the depot platform with a broad grin on his face and a deep pain in his heart.

I grinned too, but I could not say a word. My eyes were hot and my throat grew very sore. But I was a man-child and so was ashamed of it. The Anglo-Saxon will always be so. Yet I thank God for those tears.

Youth is quick to recover. Before I reached Ottawa my thoughts were all before me, and the past was dimmed. I arrived late at night with great ideas sloshing around in my head like Mississippi water in a flooded cellar.

The next morning I presented myself at the editorial room. The company published a morning and an evening edition with a twice-a-week, combined news and agricultural, sheet. Upon the latter I was to bestow my genius.

The room was deserted save for a solitary old man, red-eyed and sour-looking, slashing papers with a huge pair of shears.

"Hello," he growled, staring over his spectacles at me. "What d'yuh want now?

"Oh! I see, I see," he continued, as I ventured a word. "Another fool taken in. Funny how they come. Oh, you'll learn, never fear."

It was a sorry introduction to journalism, but I learned later it was the customary one.

When my boss-to-be came in at nine o'clock he introduced me to the boys as they returned. He explained many things to me about newspaper work that were strange. I learned anew the fact I had almost forgotten—one always starts at the bottom.

Faded my dreams of glowing editorials and crisp reports. Came a stack of exchanges to be clipped and a bunch of market reports. I was made responsible for twenty columns a week. Twenty columns! They grew on me like an evil dream. Like a bottomless tub that paper was always before me. I might fill it forever, but it would not overflow. And it always had to be out to an hour. That is the newspaperman's creed. Kingdoms may flourish and wane, comets may travel peacefully or may run amuck with our little mud ball, editors may come and editors may go, but the newspaper goes on forever. It has to, so people will know when the other things stop. I grew to pity a minister with weak nerves and two sermons a week.

"There's nothing in this game," said one of the younger reporters to me one day. "I know you hear a great deal about the romance of the newspaper and all that. But the glamor hangs her cloak on the street door and stays outside. It's just a question of bread and butter in here. True there is a fascination about the work. It's free-and-easy, and it has endless variety. It grips a man so hard after a while that it never lets go. But what does it lead to? Just look at these-

She had ceased to hear me. Her gaze—

fellows. There isn't a middle-aged man on the job except the exchange editor. The pace kills. Men just can't stand it. Then they all booze. We've got probably twenty-five men, editors and reporters, on this staff. You don't hit the high spots and I don't, but we haven't been here very long. The water is bound to wear the stone in the end, you know. Fred doesn't either, and he's the only fellow that's been here long that doesn't.

"Then there is more jealousy about this game than about a love affair. Each man thinks he can do the best work and can't understand why anyone else gets an assignment. Really none of them will make good. Hardly any do that. A few like Rex Beach do strike oil, but there's a smaller percentage than in any other business.

"Did you see that old wreck who came in here yesterday making rough-house? Well we bear with him because a few years ago he was the managing editor of these newspepers. Now it's the park benches and the cold road for him. Let's get out of it, boy. It's the rottenest job on earth."

The rottenest job on earth! That was what Dad called farming. But Percy was truthful in part, at least. Of course, it is not necessary to go to the bad at any work; only the booze seemed to get most of them in the end. Then, too, the majority of the boys did not have the writer's instinct, and they were too busy pounding away on their machines ever to learn to write. At any rate every man from the city editor down would assure you that the newspaper field was a sterile soil.

"Hello Pal," I accosted Percy Bain one October morning. "How long did Tom Foster hold down this job before he got a raise?"

"Three years, I believe."

I thought of my fourteen plunks when the ghost walked and I thought of the three years.

"Lord, 'tis a miserable world," I said. "Every job is rotten."

I handed in my resignation that night.

By constant skimping I had paid my outstanding debts and had twenty-five dollars to the good.

My next venture was in the Dominion Civil Service. I secured a position in the Seed Branch of the Agricultural Department. While on the paper I had made several good friends. I found many O.A.C. graduates occupying positions in the Agricultural Department, and a sort of freemasonry always existed among us.

My salary was twelve hundred a year in this position with a yearly raise of fifty a year up to sixteen hundred.

"Well I think you won't take to the high timber yet," I congratulated myself.

I went home at Christmas, and the neighbors thought I was a rising young man. One hundred dollars a month is a large salary in an Ontario farm district.

But after the first enthusiasm diffused I wasn't so sure of success. In the first place I seemed to be so insignificant a spoke in the great civil service wheel. In all my previous work I had had at least some opportunity to put my personality into the thing in hand. Now I was only a clerk. Some one else did the thinking, the planning, while I moved to set orders, a sort of animated machine.

Her gaze was among the mountains of Quebec.

The belief that I was not doing a man's work brought a certain self-contempt that I could not throw off. Moreover, all my new acquaintances had a kick coming. The salaries were not high and expenses were heavy. The younger, more ambitious men were looking to other things —usually through influence. The older ones had hopeless dull eyes that went to my heart.

"It is the rottenest yet," growled Dickey Williams from his stool one day.

"Eh?" I enquired.

Dickey looked out over the canal at the warping lumber barges.

"This life is. Ugh, I'm sick of it. Swelter, swelter, swelter, these days! There isn't enough work to keep a white man on the job. Five and a half hours a day! Lord! but I'd like to get hold of an ax-handle again and do one day's hard work, just for a change.

"But there you are! I suppose I couldn't pull in a hundred bones at anything else. A pile of good it does me too, I spend just exactly the hundred. I don't know why I don't spend more. Everyone else does in this joint, I think."

After this profound outburst I sat very still for five minutes.

"Don't say anything to me about rotten jobs," I snapped. "Every blighted one I've ever struck has been rotten. Ugh! isn't it hot! Let's go down to Britannia Beach."

But I didn't forget this conversation. It grew upon me. Why was I not advancing myself more quickly? Was I a man who couldn't fit in or hadn't I chosen the work I was adapted too? And finally I fell upon a great truth. I was getting just what I was worth. Suppose I died that night! Very well, a dozen could be secured to fill my place quite as successfully. To succeed meant long years of consistent work, with the competition dreadfully keen. Whenever an opening occurred there seemed to be a dozen men equally capable and meritorious for it.

"Thank fortune," I congratulated myself, "September will see me out of here. When I get my degree maybe something will turn up."

But something turned up before September.

At a Sunday school picnic in July I met Grace. That was a pivotal circumstance in my career. I was never the same afterward.

I would not try to describe her too exactly. How could I? That was years ago, but to this day, I discover new charms in her—little graces of character that reveal themselves like the unfolding wings of beautiful butterflies.

She was dressed neatly in a simple white frock. Of medium height and rather slight of figure, she stood before me in the sunlight between two cedars like a pure spirit. Her brown eyes beamed with a kindliness that clothed her as a fair garment; and her dark hair wreathed her brow like a kindness. The graciousness of her presence breathed a benediction. And all this came to me in the space of one glance.

I had come upon them suddenly. It was surprising to us all. For one instant our eyes met and I felt my heart bound. It was as though a soul leaped to welcome its kindred. And my life was changed from that hour. I do not try to explain these facts. I record them simply as they happened.

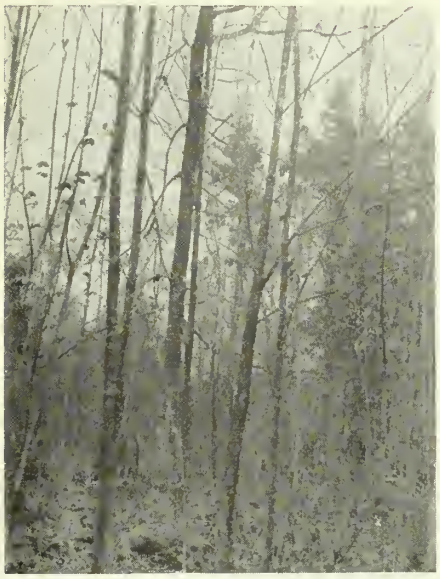
I had not been a very bashful chap and I had had my flirtations too, but a new

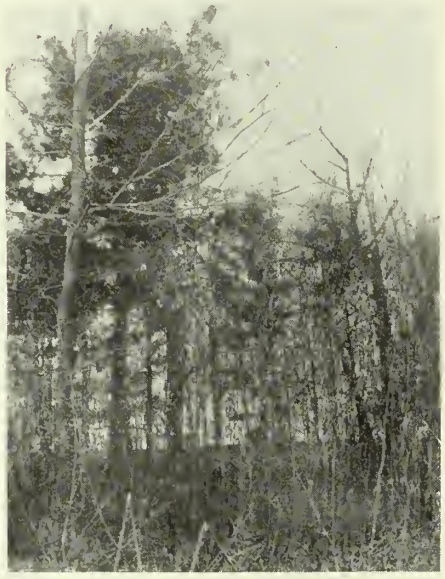
Continued on Page 81.

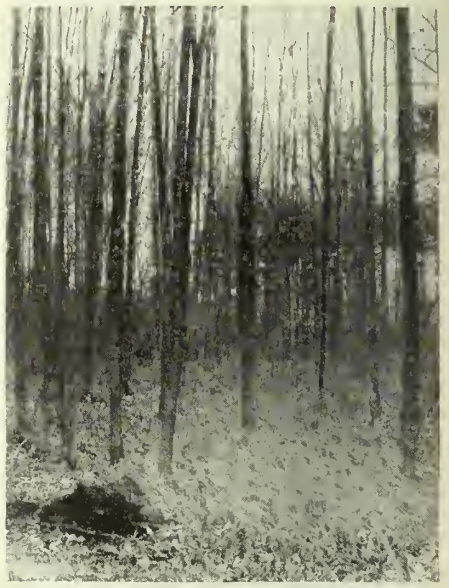
How Much is a Tree Worth?

The Farmer's Arbor Day Brings Its Returns An Hundredfold

By ETHYL MUNROE







Scenes from D. James' woodlot, Thornhill, Ont.

The wholesale sacrifice of woodlots and shade trees is now being recognized as a serious mistake by a great many farmers. In this article the writer has pointed out, not only the value of woodlots, pasture groves, protection belts, and ornamental trees as farm and community assets, but has gone rather thoroughly into how these may be built up with little expense or labor. Of special importance is the matter of improving country cemeteries and school grounds.

"A TREE'S mere firewood—unless humanized." It would be hard to say just what Mrs. Browning meant by "humanized," but it sounds right—at least to the man who can see in a tree, something more than a green thing that stands in the way. It requires vision to appreciate the real value of trees whether it be reckoned in terms of utility or sentiment. The man who plants and prunes and protects waits long for results. He bequeaths a lot to coming generations but this doesn't appeal to the materialistic herd of humans, so much as to dig and drain and hew from the earth every resource that can be converted into a dollar to-day, leaving the rest of the principle to "After Us the Deluge." If it were not for the men who can look ahead, our farm landscape would soon be as bald of wood-lots and windbreaks, sugar-bushes and shade trees as a yellow desert.

And it is surprising what even one man can do. In a prosperous county of Ontario a young man came home to farm and he did some queer things. It was strange enough to hang a chart and stilliards in the stable and keep a diary of each cow's performance or to take time to run a system of bookkeeping just to see how things were panning out, but when he began to give his love for trees a chance to express itself, there were more surprises in store for the community.

At that time the Department of Agriculture was giving free supplies of trees for windbreak and woodlot planting. They do not supply windbreak trees now, although any farmer wishing to improve his woodlot or reforest waste portions of the farm will be furnished seedling trees or cuttings at no expense other than the cost of transportation. In the spring a shipment of one thousand small Norway spruce arrived at the farm and were set out in nursery rows to be later transplanted to permanent positions. Since the trees became large enough to transplant it has taken considerable time each spring, moving them to windbreak rows around the house and barns, and along fences, but the result already justifies the outlay, and what will it mean in ten or twenty years?

Of course the whole thing might have ended with that if the young man's interests had not extended beyond the line fences. The local school ground and the cemetery, like many others in our rural districts, were not by any means landscape gardens, so when the transplanting season came around he offered to supply the Cemetery Trustee Board and the School Board with trees, if they would furnish help to do the planting. Now they have promising rows of evergreens where before there were only wire fences.

Another problem came up when the committee in charge of the cemetery decided to carry the improvement plan further by cutting out all the trees growing naturally in the enclosure leaving it simply a collection of head stones. There were some good old trees here, that had sprung up and grown evidently of their own accord entirely, and it seemed for a while, that the rustic beauty of the place would be sacrificed. A prophet is not received in his own country—at first, but he can sometimes import a foreign prophet whose philosophy is akin to his own and whose reputation gives ballast to his opinions. That spring the Farmers' Club got Prof. Hutt of Guelph, to come and talk to them about the adornment and beautifying of rural grounds, and the trees were saved.

But what is perhaps more disturbing than the absence of ornamental trees is to see our farm woodlots disappearing. Every winter sees fine old hardwood groves and beautiful sugar bushes go down before the ax, and when some one does wake up to the outcome of the slaughter, he finds a life time job ahead of him in getting the lot reforested. Another spring this farmer got a thousand white pine seedlings from Guelph, for making a planting back on the corner of the farm. They are now growing well in their permanent location, along with a grove of hard maples. It is a slow, laborious job, this planting compared with the work of the man who already has a woodlot and need only shut out the stock in order to let the seedlings grow; still as the nature of forest planting becomes better understood, many will undertake the work who at present are a little afraid of the outlay in expense and labor.

Forest planting is a far more simple operation than park or orchard planting. Small plants with well-formed roots especially adapted for transplanting are used and the moving is done at a season when the plant is in a dormant condition. In southern Ontario, from the end of April to the beginning of May is gener-

Remnant of a beautiful woodlot unnecessarily sacrificed. An instance of the universal preference for immediate gain to indirect but more far-reaching benefits.

ally the safest time. Evergreens may be handled between the middle of August and the middle of September. (Larger, ornamental evergreens are planted at other seasons). The small plants cost little and can be placed in the ground with less labor and less injury to the root system than where a larger tree is handled.

In forest planting we have to plant many more trees than will eventually be found in a mature forest. If trees with clean, tall stems are desired it will be necessary to plant close in order to kill off the side branches and force the trees in height growth. Close planting also gives earlier soil protection, preventing the growth of grass and weeds. Where hardwoods like white ash, elm, maple, oak and chestnut are being planted it will pay to plant even as close as four by four feet apart each way to get soil protection as early as possible. The number of plants required to plant an acre in squares would be:—

3 ft. x 3 ft.	4,840 plants
4 ft. x 4 ft.	2,722 "
5 ft. x 5 ft.	1,742 "
6 ft. x 6 ft.	1,210 "

To have a permanent woodlot where conditions are favorable for tree growth of course the stock must be kept out. This has its effect on the soil, the protection of young growth and the older trees. While the effect of grazing on the soil may be least noticeable it is very important. Destruction of young growth soon opens the woodlot to drying winds that carry off the humus forming leaves and lessen the moisture content. Light begins to enter causing grass and weeds to start which soon develops a stiff sod, and trampling the soil makes it impervious so the water runs off the surface instead of being held in the soil. All these conditions make it difficult for the tree seeds to germinate and soon there is no reproduction taking place.

The leaves and tender branches of young growths in the woodlot are eagerly browsed by the animals. Some species of trees are less liable to browsing than others, and as ironwood seems to be particularly immune in many woodlots that have been grazed most of the young growth is composed of ironwood.

The trampling of the soil, the destruction of young growth which should protect the soil from sun and wind, and the formation of an impervious sod, all aid in lessening the vigor of growth of the standing, full grown trees. While the injurious effects are scarcely noticeable

D. James standing beside a monster pine stump on land that he is now using for his woodlot.

to the common observer, the annual amount of wood produced is far below what it should be.

Stag headedness or dead tops in immature trees is also due to lack of nourishment and moisture in the soil.

Stock Protection and Windbreaks

Clumps and belts of trees for the protection of farm buildings, stock and orchards, have a positive economic value.

Dollars' worth of windfalls are saved by windbreak belts around orchards.

Stock in protected barns require less food, protected houses need less fuel, and dollars' worth of windfalls are saved by windbreak belts around orchards. The worth of a clump of trees on waste corners of permanent pastures or fields occasionally used for pasture, can be appreciated by watching the animals on a summer afternoon retreat to the shelter of whatever trees happen to be in the field. To get a good shade clump in a pasture it is necessary to fence in the planting till the trees are three or four inches in diameter. The box elder, white elm or soft maple would be best suited for such work. Box elder and white elm grow fast, develop a good shade, and stand the abuse of animals.

Evergreens make the most satisfactory windbreaks, since they give protection both summer and winter, and form a dense growth down to the ground. Cedar, hemlock and white pine are commonly used, but Norway or white spruce are better. Where one row of spruce is to be planted the trees should be from six to ten feet apart. When two rows are planted the trees should be from eight to ten feet apart, the rows about eight feet apart and the trees in the two rows planted alternately—not directly opposite. A mixture of evergreens planted in clumps around a building requires more space, but looks better than a straight row, but if the trees in this case are planted too near to the building they may become a nuisance when full grown. The small seedlings from two to twelve inches in height for windbreak planting cost about eight dollars a thousand; larger transplants, up to several feet in height about fifteen dollars a thousand. The latter would do very well for roadside planting, but this would make a story by itself. We all know the long stretches of shadeless road so common in the well-settled districts of the country and the relief with which we turn in at a lane with cool maple shade, but we have little of the Old Countryman's enthusiasm for beautifying the highways. In some of the European countries even fruit trees are planted along the public roads, but next to the maple perhaps there is no better variety for Canadian roadside planting than the black walnut.

Nut Trees

A branch of forestry that has been almost entirely neglected in Canada, is the cultivation of nut-trees. Every year sees nut food growing in popularity with the students of cookery, as a wholesome and staple luxury. They are a luxury because they have to be imported while Canada has all the natural resources of a nut country. Almonds, walnuts, and hazel nuts are richer in proteid than the average lean meat with from five to ten times as much fat. Chestnuts besides containing ten per cent. each of fat and proteid have over seventy per cent. of starch, and lend themselves to so many methods of cooking that they make a most desirable food. Even the native butternut growing by accident in our pasture fields affords a delicacy that every farm boy considers worth days of strenuous searching for every fall.

There is no reason why we cannot have more of them.

Perhaps the greatest commercial possibilities will be found in the black walnut. Trees planted from seedlings will not bear under nine or ten years, but budded or grafted trees can be made to bear when five or six years old. Trees of the best variety will yield from $50 to $75 per acre when seven or eight years old, and the yield increases until the trees are thirty years old. Then they are good for generations to come. Estimating that we have twenty-five trees to the acre and each tree produces two hundred pounds of nuts every year, we are assured of a handsome income from a walnut grove.

In fact if someone could figure out for us in actual coin the value of trees on a farm, we would have some startling revelations. Shade trees, windbreaks, and ornamental trees belong to the same class of asset as good buildings. A well-preserved woodlot is a fortune in the eyes of the lumberman, to say nothing of the indirect value to agriculture in protecting crops from hail, wind and drought. But if there is one farm resource where we could afford to omit monetary considerations surely it would be trees. The groves, we read, were God's first temples and, the dignity of that office has not left them. You will never feel more keenly the significance of your calling than when you stand in a forest that your forefathers have planted and you have preserved.

School grounds at Birr, Middlesex Co. The evergreens were transplanted from the Coleman farm across the road.

Efficiency in Farm Machinery

Implement Sheds Would Save Our Farmers Millions of Dollars Yearly, Gasoline Engine and Tractor Troubles Overcome

By GEORGE H. DACY

The care of machinery is distinctly a matter of dollars to the farmer, and no amount of ordinary wear will do so much to shorten the life of an implement as leaving it under a tree exposed to the weather all winter. We have here an excellent plan for a shed to house a full equipment of farm machinery and some interesting information about gasoline engines and tractor troubles.

"JIM Burgess is going plumb daffy. What do you think of the likes of him, whose father used to dig ditches, spending $400 for a shed for machinery. Time was, before these new-fangled ideas sprung up, that a big oak tree was all the shelter a farmer needed for his plows and harrows and fixings. But law a-mercy! to-day it's a wonder that some of these farmers don't try to deck out their horses in silks and satins. They'll be doin' it yet."

Thus ranted Aunt Maria. All because Jim Burgess had built an up-to-date machinery shed. Every farming community has its Aunt Maria, ever ready to pick flaws in some progressive neighbor's system of management or mode of farming. And nearly every rural district has one or two Jim Burgesses, who are endeavoring to farm according to approved practices and in consequence for a time are the butts of the countryside. If they are so fortunate as to make good they become boss farmers of the districts and shortly all their neighbors are aping their methods. And, alas, if they fail, the countryside never tire of telling how the disasters were wrought; how the book farmer made a fool of himself!

Aunt Maria is usually narrow and bigoted. Her field of vision is restricted. She is mired in the rut of community retrogression. She, perhaps is still working a spinning wheel and in a hundred other ways she is wasting valuable time and hand labor in performing tasks that she could more efficiently do if she employed some of the modern household conveniences to assist her. She has been accustomed to do things as her mother and her grandmother did them, and she will never change. She believes that her neighbors should farm according to eighteenth century methods. She is staunchly loyal to the old school. She is one of the old guard of near pioneers who are unable to adapt themselves to modern-day methods.

The Jims are Growing

Jim Burgess is the antithesis of Aunt Maria. He is progressive, practical and scientific. Perhaps he has attended the short course or farmer's course at the agricultural college. Anyway, he appreciates the value of the machinery shed. He knows that care and attention devoted to the proper housing of his farm implements will immeasurably prolong their lives and efficiency. Annually he is one of the thousands of farmers, who all told, spend about $100,000,000 for farm implements. The average farmer exhibits progressiveness in his ready adoption and purchase of improved machinery, but he wofully errs in his subsequent neglect of this same machinery. That is why the Jim Burgesses of every farming section with their handy machine and tool sheds are to be admired.

Any farmer, who is going to invest $85 in a new grain drill, had much better save his money and rent his neighbor's drill, if he is not going to properly house and care for the machine subsequent to its purchase. The average farmer will shelter his cattle; he will crib his corn, mow away his straw and hay; he will fill his silo, and store in his root cellar plenty of mangels and turnips. But short-sightedly, he will leave his grain binder, his corn harvester, his cultivator and even his farm wagon out in the weather to face the blasts and extremes of severe snow and rain storms. These farmers, who expose their farm implements, are decreasing the periods of service of the machines by about sixty or eighty per cent. They would ridicule the man who went out in the field and smashed his mower to pieces with a sledge hammer, yet they in a way are effecting just as serious damage to their implements by their shiftlessness and neglect.

Rust Costs More than Wear

Invariably exposure reacts more injuriously on machinery than does the hardest wear. It is abuse not use that shortens the lives of the implements. The average life of an exposed piece of machinery is about five years, a depre-

The average farmer exhibits progressiveness in his ready adoption and purchase of improved machinery.

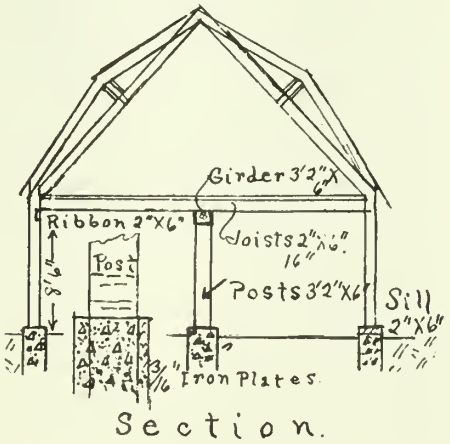
ciation of approximately twenty per cent. a year. Were the same machine well housed and protected it would last for twelve or fifteen years. A good machine shed spells the difference between these two extremes: It will easily pay thirty per cent. on the investment the first year it is in use, while it will lengthen the active service of the machines from fifty to one hundred per cent. Under such circumstances it is small wonder that the number of Jim Burgesses with their up-to-the-minute machine sheds is annually increasing.

A machine shed sixty by twenty-four feet in dimension with a farm shop in one end will cost about $350, where a concrete foundation and sliding doors are used. Taking into consideration the prolonged life and increased value of the machinery due to storage such protection will cost the farmer about $20 per year. Every farmer can afford to annually expend such a comparatively small amount to insure the well-being of his implements. Furthermore, the farm that supports a well-equipped shop and machine shed is better able to utilize the spare time of the help. Odd moments during the winter can be profitably spent in the shop repairing and tinkering up the crippled implements.

A Good Farm Rule

A basic rule on every farm that boasts a shelter for machinery should be that each piece of machinery must be returned in good condition to its place in the shed as soon as it is no longer needed in the field. This makes for orderliness around the farm and lengthens the period of usefulness of the implements. The owner always knows the whereabouts and condition of each machine where this rule is enforced. It never takes much extra time to return the tools to the shed when the team is hitched to them after the work is finished. A few moments spent in this manner may save hours of trouble and annoyance later on.

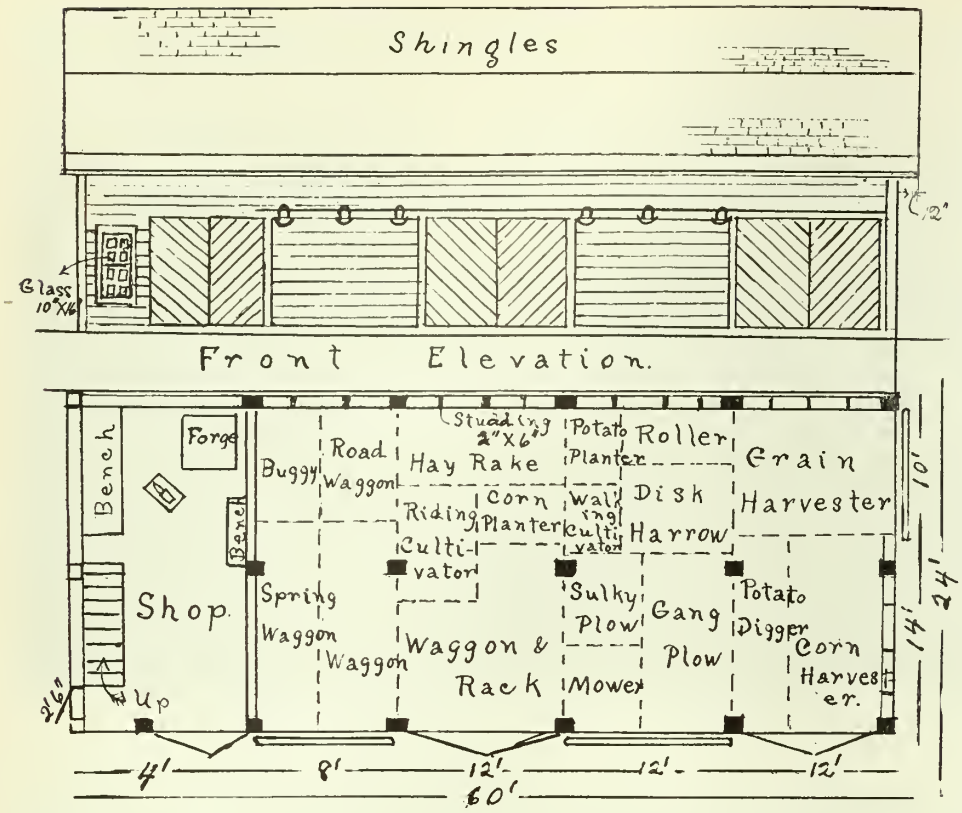
It is essential that every piece of machinery be cleaned, oiled and overhauled before it is stored for the winter. Any repairs that are required should be ordered and subsequently properly adjusted. All bolts should be tightened and the bearings should be saturated with lubricating oil while the wearing surfaces should be liberally coated with hard oil to prevent rusting. The binder attachment and the working parts of the mower should be taken apart and thoroughly cleaned, all the gummy oil should be removed, while the more delicate parts should be cleaned in coil oil. Cases are on record of binders that have been accorded such treatment that have been actively worked for more than thirty years.



Big Money Saved by a Shed

During the period of slack work in the winter all the plow shares, cultivator hoes and harrow teeth should be sharpened. Ordinarily the manure-spreader is busy throughout the winter, and care should be exercised in cleaning this machine to see that no manure is allowed to accumulate and freeze in the box drum and cause a bad breakdown. All broken parts or pieces about to break should be replaced or repaired during the season of light work. If a small stove is placed in the farm shop it is possible to paint part of the machinery during the winter. Paint is a preservative of high rank, and its liberal use means longer periods of active service for the machines thus treated.

An engine expert is authority for the following, which pertains to the winter care of steam engines: "No oil or grease should be left in the cups to congeal or harden. Rusting in the stuffing boxes should be prevented by cleaning out and replacing the old packing. In the case of large engines the scale should be removed from the interior of the boiler, while the exterior should be painted with asphalt paint. During the cold months water should never be left overnight in the boiler or water jacket of the engine as it is liable to freeze and burst these parts.



"The inexperienced operator meets with difficulty in managing the gasoline engine during severe winter weather. The primary essential of the gasoline engine equipment is a good, solid foundation made of concrete. If concrete is not available, the engine should be securely bolted to heavy timbers that are fastened to the floor. They should be of adequate size to absorb all violent vibrations. A secure foundation increases the floor bearing of the engine and makes for increased rigidity. The engine should under no circumstance be run faster than its specified speed as otherwise the operator is merely wasting the power of the machine without realizing the most efficient work. Care should be exercised in belting the engine to a piece of machinery to use pulleys of the right size as otherwise energy generated by the engine will be wasted.

"When a new engine is first started the valves occasionally are gummed to such an extent that they will not wholly close. In other instances the valves stick so that the compression is lost. This reduces the amount of compression of the engine. The best remedy is to squirt a little gasoline or kerosene on the valve stems in order to clean off the sticky oil. Compression is also often lost on account of lack of lubricating oil on the piston and cylinder walls. To correct this difficulty the operator should turn the fly-wheel over until the piston is drawn out of the cylinder, and then he should cover the projecting parts with a liberal coating of lubricating oil. This oil will act as a seal.

"It is a hard matter to start engines during cold weather. Water-cooled engines can be more easily started by closing the drain in the bottom of the cooling jacket and pouring in about two pails of warm water. The last pail of water should be very warm, but not at the boiling point as extremely sudden expansion might cause the cylinder to crack. The increased warmth of the cylinder will effect the rapid ignition of the charge.

Avoiding Misfits in Harness

By JOHN Y. BEATY

THE average man who works horses pays less attention to the harness than he should. There are hundreds of horses being worked every day with a harness that should never be used on them. Parts of it are too loose or too tight. Either fault is bad enough.

The collar is of first importance and it is probably the one part of the harness that causes more trouble than anything else. Sore necks and sore shoulders need not be had if care is taken in fitting the collar.

Usually when a new harness is purchased the harness-maker fits the collar to the horse that is supposed to wear it, but too often that collar is made to serve for two or three or even four horses of different sizes and of different conformation.

Sometimes the looseness is taken up by a sweat pad which may do as much damage as it does good. If a good collar is provided for each horse that is to be worked and that collar is properly fitted, the adjustment of the rest of the harness does not make quite so much difference. There is trouble, however, when the different straps that are placed upon the harness for the sake of adjustment are not attended to properly.

A back-strap that connects the saddle with the crupper is often adjusted so tightly that it makes the horse's tail sore. Very often the blinder is allowed to be so loose that it flops about and causes the horse annoyance. No horse can work to its greatest efficiency unless the harness is so adjusted that every movement counts for work.

It need not take more than half an hour at the most to properly adjust the entire harness, and when it is once adjusted, it need not be re-adjusted as long as it works well and is used only on one horse.

Very often a mistake is made in adjusting the inside reins on a team. As a rule, two horses work better together if they are not worked too closely. The outside rein should be adjusted more tightly than the inside ones. Thus it is that the horse on the side to which the team is to turn receives the signal first and his movement in that direction brings over the other horse without jerking him out of his course. A team drives much more easily and with greater efficiency when the reins are adjusted in this way.

Other sources of difficulty with work teams are poorly adjusted neck-straps and neck-yokes. The ordinary neck-yoke-strap that runs through the neck-yoke-ring in the form of a triangle does not make it possible for the horse to give all of his strength to backing. If possible, straps should be so adjusted to the neck-yoke that they will connect directly with the breeching on each side. Thus it is that the horse pulls with two tugs and backs with two straps in the same way.

Very often a poorly adjusted blinker on the bridle either impairs the horse's eyesight or injures it entirely. Blinkers were made for a purpose, but when they are not properly adjusted they are sure to cause a great deal of damage. A loose blinker has caused more than one runaway.

One of the British Columbia schools for apple pickers at work in the Okanagan valley. These people seem firmly impressed with the fact that apples should be handled like eggs.

Certificates for Apple Packers

British Columbia's Schools for Apple Packers are Producing Experts

By W. A. CRAICK

If there is one profession that suffers much through the lack of skilled labor, it is that of the orchardist. So much of the successful sale of apples depends upon proper pruning, spraying and thinning, that it is very little wonder that the growers of British Columbia have prevailed upon the Government to start a school for pruning and packing. Mr. Craick made a personal visit at the instance of Farmer's Magazine and has summed up his observations in a way that will form most interesting reading.

NOT so long ago when the British Columbia fruit-grower employed hands to help out with the apple harvest, he paid little or no attention to the qualifications of the people who applied for a job. It was a case of getting the fruit picked, packed and shipped as expeditiously as possible and any able-bodied man or woman, boy or girl, would do. The process was seemingly so simple and so easily performed that there was no question as to the average person's capability of handling it.

Nowadays, however, there is a different scene enacted when an apple packer asks for a job. The fruit-grower is getting particular about his help. He knows that the day of haphazard packing is over and he wants scientific handling for his fruit. A new query is leveled at applicants, indicative of the changed state of affairs. They are asked whether or not they hold Government certificates as expert packers. If they do, there is no hesitation about employing them. If they don't, their employment depends a good deal on the condition of the labor market.

Certificated apple packers are now quite the thing in British Columbia and fruit-growers are eager to get their services. Thanks to the progressiveness of the provincial Department of Agriculture, opportunities for obtaining these certificates are becoming more and more common. It is now five years ago since the idea of holding schools for the training of apple packers was first conceived. Since then an increasing number of classes have been held each winter, and interest in the work has spread amazingly. Indeed, it is now computed that 85 per cent. of the apple crop of the province was handled last year by people who had received instruction on proper methods in the Government packing schools.

Arrangements for the holding of the schools are made during the fall and formal applications are required from each district desiring a school. Usually the matter is handled by a responsible local organization, such as the Farmer's Institute, the Fruit-Growers' Association or the Board of Trade, who are required to look after the details such as securing the pupils, renting a hall suitable for the purpose, providing the fruit for packing, collecting the fees and doing other secretarial work. In this way the success of any school is guaranteed from the outset, and the department has nothing further to do than to send along an instructor at the proper time.

A minimum of twelve pupils is required before a school can be carried on. Moreover, the pupils must meet certain fixed requirements, which are stipulated in the formal application for the school. They must be either

(*a*) Able and willing to take up commercial fruit-packing in the ensuing packing season, or

(*b*) Connected with a bearing orchard in which their services are intended to be utilized as packer, overseer or inspector, or

(*c*) Fruit-growers or shippers whose packing-school experience will be of benefit to the district as a whole.

The school lasts just one week, but it is a busy week at that. Classes are held each morning and afternoon for six days and the lessons last for two and one-half hours at a stretch. The object in view is to give all possible information regarding the putting up of a first-class pack. One might suppose that enough instruction could be given in a day to meet all the needs of the case, but this is not so.

There is a great deal more involved in the course than that, and besides it takes more than one day to transform an amateur into an expert.

Grading, An Art

Instruction comes under various heads. First of all comes grading which is admittedly a most important piece of work. This is followed by information about the various styles of packages. Then comes the wrapping, also a matter requiring careful attention. The actual packing follows, while even the item of nailing down the cover needs expert treatment. Finally there is the marking of the box. The instructor also spends some time in interpreting fully the provisions of the Fruit Marks Act, and ends by describing the ideal packing house equipment. Under all these heads there are an immense number of incidentals which take up the time of the class and so the week soon speeds past.

The Department of Agriculture bears the expense of providing the instructor and also pays for the fruit and the packing paper. As far as possible local fruit is used and the organization making the application for the holding of a school is required to secure it in good time. About 2½ to 3 boxes are needed for each pupil, and the harder varieties of apples, such as Ben Davis, are preferred. The fruit must, of course, be in good condition, but need not be graded and none of it should run under 2¼ inches in diameter. Incidentally it might be mentioned that to accommodate a class of fifteen, which is the maximum, a hall at least 15 by 30 feet is called for. It must be sufficiently heated to prevent chilling of the fingers of the scholars and freezing of the fruit at night.

Uniform Instructions

It has been desirable to standardize instruction as much as possible, there being several instructors in the field at the same time. To accomplish this purpose a conference of these men was held last fall in Vernon, where a standard system was arrived at. They are now conducting their classes along precisely similar lines. The aim in view is to secure quality of pack rather than speed and pupils are not encouraged to excel in rapidity of work. If they can handle from 70 to 80 boxes a day, they are regarded as sufficiently proficient.

So far the best support for these schools has come from young men and women who are themselves owners of orchards. This is a class who stand to benefit directly from the knowledge to be gained. Besides them there are several recruits from the towns, people who wish to become qualified to go out and earn good money in the harvest season. As a matter of fact only about 25 per cent. of the pupils win certificates, since a pretty high standard of efficiency is required before they are issued. Still the very fact of attendance is to any one's advantage, and to be able to say that one has had a week's training in apple-packing is a useful asset. The instruction is not given for nothing, but pupils are required to pay a fee of three dollars.

The result of the effort which the department has put forth through these schools to improve the apple-pack throughout the province has been very gratifying. The standard has been noticeably raised and in some districts the methods have been entirely reformed. The fame of the system has been noised abroad and requests have come from as far as Australia for information about it. The department has responded by sending an instructor to explain the idea of the schools, whenever such a course was feasible and already men have gone to Australia and Ontario for the purpose.

A pruning school in the open at Creston, B.C., on March 21st, last. Perhaps there is no occupation that suffers more from the lack of skilled labor than that of apple pruning.

Pruning Schools Now

During the present season the Department of Agriculture has made another innovation in the shape of arranging for pruning schools in which the principles and practice of scientific pruning will be taught. These schools are organized in much the same way as the packing schools. That is they are carried on under the auspices of some responsible body in each locality, while the department provides the instructor. A formal application is required and a minimum of eight pupils asked for. Where the number of pupils in a district justifies, two schools may be held, but the average class should not exceed twelve. The fee is two dollars per pupil and the course consists of ten lessons of three hours each.

A good deal of the work is practical and the students are taken right out into the orchard by the instructor and given a demonstration of how the work should be done. Following this experience they are taken into the class-room and several lectures on the principles of pruning are given to them. These come under the heads of the theory of pruning, the formation of fruit buds, pruning as related to plant growth, the top-grafting of undesirable varieties and first aid to injured trees.

It is too soon as yet to comment on the success of this new course, but if it meets with anything like the reception accorded by the fruit-growers to the packing course, it will indeed be a gratifying achievement. The competition of Washington and Oregon in apple culture is felt pretty strongly in British Columbia and any steps which may be taken to improve the local crop are pretty sure to meet with good support.

SHOEING A HORSE WITH CORNS

The inside of a horse's foot is very tender and when it is not properly fitted with shoes or when it has this tender portion irritated, a corn is likely to form. A corn appears as a reddish spot in the angle between the wall of the foot and the ball. A corn is usually on the inside of the front feet—for some reason it is scarcely ever found on the hind feet.

Sometimes a horse after it is driven rapidly over hard roads will develop corns. A shoe that is fitted so that any portion of it presses upon the tender part of the foot is almost sure to cause a corn.

As a rule, a farmer with a few tools and a little care can treat a corn just as well as a blacksmith or a veterinary. The first thing to do is to remove the shoe and correct the fault that may be causing the trouble. If there is no pus apparent, the discolored part of the hoof should be cut away until healthy horn is seen.

If, however, the corn is of long standing and pus has formed, the loose horn must be removed very carefully and the foot placed in a hot flax seed poultice for several days. This poultice must be changed several times a day so that the heat may be renewed. The injured portion is washed out with a solution of creolin—made of creolin one part and water twenty-five parts. When the pus has disappeared, the wound should be plugged with oakum and tar.

A new shoe should now be put on arranged in such a way as to hold the plug in place. Usually a bar shoe will serve the purpose, sometimes a three-quarter shoe is used.

Why Not More Beef?

By MAJOR WALTER JAMES BROWN

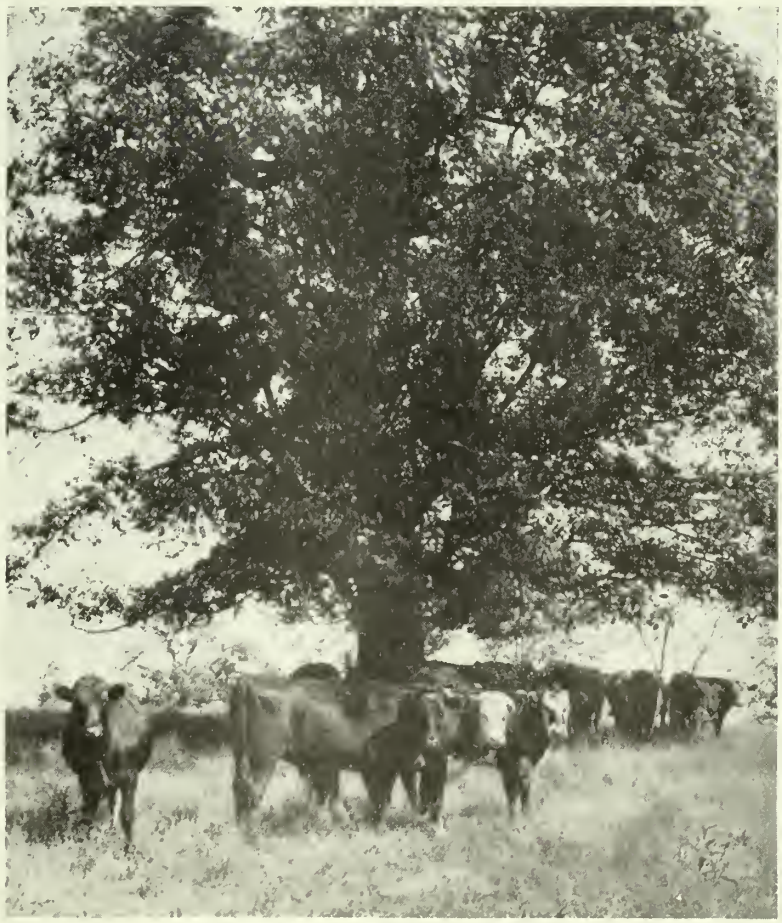
Captain Robson, the noted Ontario livestock auctioneer, tells a good story about the Quaker preacher feeding a calf. Perhaps a preacher is not the best kind of person to do this job.

Money-making Suggestions for Canadian Farmers Who Could Increase Their Output

Dairymen will be especially interested in this article, as it makes suggestions whereby the Holstein breeders especially, can materially add to their incomes and properly take care of the calves from their herd. The fact that beef is scarce and selling for a high price in the market, ought to open the eyes of every dairy farmer as to some way of reaping in the dollars from a combined dairy and beef business. Major Brown, recently editor of the Weekly Globe, and now one of the big farmers of Western Ontario, is amply qualified to handle this question. His arguments are well worth considering.

NO statistics are necessary to prove that beef cattle are scarcer each year. This is true not only in Canada, but is true in the aggregate as well. The prices for dressed beef are so high that thousands of people in the cities of Great Britain, United States, and Canada cannot afford to use it regularly as an article of diet. A very large percentage of beef sold on the markets of this continent is inferior in quality. The highest prices are obtained only for the prime beef, produced by animals that are of good feeding type and have been finished by men of intelligence and skill. Any one who has studied the records of the Canadian and United States markets for the past twelve months must be forced to the conclusion that the days of cheap beef are gone, probably forever.

Someone has well said that "where there is a need there is a fortune." Certainly there is a need for more beef, and Canadian farmers may supply this need if they will. There is money in the business for the Ontario farmer, even under existing conditions, if he goes about it in the right way. There are thousands of dairy farmers in Ontario and Quebec who might add enormously to their annual profits if they gave this subject of beef production the consideration it deserves and put their conclusions into practice. Looking at the question from the dairyman's point of view there are a number of factors involved. These may be stated as follows: (1) The supply of qualified farm labor is limited and it is scarcely possible on the average farm to secure and maintain the help necessary to milk the maximum number of cows that may be fed; (2) if all the plough land on the farm were thoroughly cultivated under a four-course or five-course rotation it would be as easy in the majority of instances to keep 40 or 50 head of cattle on 100 acres as it is now to keep 10 or 20 head; (3) if every farmer kept individual records of his cows throughout the whole milking period of each year he would find great variation in the milk yield and would discover that, perhaps, half of his cows are not to be classed among the best producers of milk; and (4) when individual records are kept, it follows, as a matter of course, that the heifer calves will be



The grade Shorthorn steers in a deep blue-grass pasture. Many cattle will be fed this year on farms where help is scarce.

In the Northwest there is a greater disposition to go into feeding cattle in order to use up the cheaper grades of wheat and other grains. The way that Alberta is going into mixed farming will be a revelation to the ordinary Canadian.

saved for the herd only from the cows that are giving the heaviest, richest, and longest yield of milk for the food consumed, but to destroy the balance of the calves or to sell them as "deacons" is an economic waste that neither the farmer nor the country can afford. To destroy deliberately anything useful, especially anything that may contribute to the well-being of humanity, is scarcely less than immoral. In these days when it costs so much to live and meat is so scarce the farmer's obligation to produce the maximum of foodstuffs is by no means light.

The dairy farms of Ontario and Quebec have in the last year or so been cleared of their surplus cows. In many instances whole herds have been sold. The cows have been shipped to the West and to the United States. The result of this sudden depletion of the dairy stock is that cows and heifer calves are exceptionally high in price. Cows are selling easily from $60 to $100 each, while at the auction sales in Western Ontario during February and March of this year, heifer calves five and six months old sold from $30 to $40 each. Very few calves in the dairy districts are being killed this spring. Many farmers are buying all the calves they can feed and expect to make money out of them. As there is also a heavy demand for milk at good prices the calves are being raised on commercial calf foods or other substitutes for milk.

One farmer in Elgin county last year solved the help problem by making a business of fattening calves for veal. Although he lives within three miles of a milk-powder factory where high prices are paid for milk he did not send any milk to the factory. One cow supplied the family with milk and butter, all the other cows in the herd fattened veal calves. Young calves were bought at low prices throughout the season. The cows averaged two calves every month or six weeks. This system proved rather hard on the cows; but they were well fed and the owner said he made more money from his cows than his neighbors made from theirs by milking the cows and taking the milk to the factory. The business of feeding veal calves proved so profitable that the owner of the herd bought and paid for an automobile and made some improvements in his farm buildings out of the proceeds.

The vealing of calves is an industry of live stock husbandry in Canada that deserves far more attention than it receives. More than 100,000 veal calves are sold each year in the two cities of Toronto and Montreal alone; but not more than 10 per cent. of these calves are prime veal. There is little or no profit in the thousands of inferior calves that flood our city markets every spring. They are scrawny specimens, carrying comparatively little flesh and that of inferior quality. But the profit in prime veal is considerable as it always commands the highest market price and the demand is far in excess of the supply. Cows that are hard milkers, or that kick, are found in most herds and might be economically used for the purpose of fattening veal calves.

As a means of producing more beef it has been argued in the agricultural press and on the platform at farmers' meetings and conventions that the dual-purpose cow should be substituted for the special dairy cow. It has been claimed that the dairy shorthorn is the ideal breed for this purpose, while shorthorn breeders are urged to give more attention to the milk producing qualities of their herds. The writer has followed these discussions with a great deal of interest for many years; but is yet to be convinced that the policy of breeding the dual-purpose cow is sound. There are very few farmers who can afford to experiment in a matter of this kind. If in the future the agricultural experiment stations can prove that a dual-purpose cow will give 8,000 to 10,000 pounds of milk, testing at least 3.8 per cent. of fat, during the year, and will produce a calf that will, according to its sex, make a first-class dairy cow, or a prime beef steer, then it will be time enough for dairy farmers to change their stock. In the interim some other solution to this problem must be sought.

The necessity of producing more beef is apparent. There are a great many people who think that it would be a mistake for a dairyman to try to produce beef or for a beef producer to try to make a profit by feeding milch cows. This is an age of specializing and it is true that the specialist often makes the most money; but owing to the difficulty of getting farm help the business of feeding cows for milk has its limitations. Those limitations are such that they circumscribe the business of the farm and permit but a fraction of the number of animals to be produced and maintained on the average farm that the land, if properly cultivated, might easily carry. The writer has in mind one dairy farm of 250 acres which produces about $3,000 worth of milk per annum. The owner of this farm says that if he desired he could feed profitably 120 cows from the fodder and grain that may be grown on this farm. As it is he keeps only 25 cows milking throughout the year. The reason so few cows are kept is that it is difficult to get the help necessary to do the milking. It would, however, be possible to feed two car loads of steers and heifers each year without adding to the number of men employed. Two carloads of beef cattle would add to the income of this farm from $1,200 to $2,000 a year. This farmer grows corn for ensilage, clover hay, oats and peas. He does not buy any food for the cows. He would not have to change his plan of rotation very materially to provide suitable crops to fatten beef cattle as well. No veal calves are fattened on this farm, while the owner says that he would not think of keeping a heifer calf from a cow that does not give 40 lbs. of milk a day during the season of greatest flow. The larger proportion of the calves of this herd are sold each year as "deacons." Is this the only method that business shrewdness can suggest?

Let it be assumed for the sake of the argument that the dairy farmer can increase the supply of beef if the way be pointed out to him. There are nearly 2,000,000 milch cows in Ontario and Quebec. If fifty per cent. of these cows are good milkers we have the foundation on which a successful dairy industry may be maintained. These 1,000,000 cows should be selected by individual milk records running throughout the year. They should be bred to pure-bred bulls of known and proved milking strain according to the breed selected by the owners in each instance. The heifer calves will be retained and the bull calves, unless they are of registered stock on both sides, fattened for veal. Then the other 1,000,000 cows which are not quite so good as producers of milk should be bred to a first-class bull of one of the standard beef breeds and the heifers and steers fattened for beef and sold at twelve or eighteen months old. This scheme will yield to the country approximately 1,000,000 choice beef animals a year. They should be worth at least $60 each and the total revenue from

this source would be between $50,000,000 and $60,000,000, or a sum equal to nearly three times the total value of the cheese exported from Canada each year. This plan can be put into operation by practically every farmer who keeps dairy cows and it will not reduce the production of milk, butter or cheese, by a single pound. The plan simply means that every farmer in Ontario and Quebec who makes a specialty of dairying shall divide his herd into two groups, namely, his best cows and his second best, and then breed the best with a view to herd improvement and the second best with a view to producing beef. The writer suggested this scheme eight or nine years ago; but it did not receive favorable consideration. The plan is not new or original. The Scottish dairymen of Ayrshire have been practicing this method for a great many years and have been extremely fortunate in meeting the demands of the British market for prime beef.

It is not only in the home county of the Ayrshire breed of dairy cattle that this scheme of combining dairying with successful cattle rearing finds favor; but in all parts of the British Isles where the Ayrshire milking stock is pre-eminent. The Galloway bulls are used on the Ayrshire cows. One authority on the Galloway cattle says that, "this plan of producing Galloway-Ayrshire crosses is perhaps the greatest use of the Galloways in Scotland, England and Ireland to-day. The bullocks of this cross, if well bred and well reared, make good feeding animals and the heifers also make good feeders. The most remarkable point about this cross is that 99 per cent. of the offspring will resemble the bull very closely, being invariably all black and all polled. The crosses often resemble the Galloway cattle so closely that they are mistaken for pure Galloways. This shows the splendid propotency of the Galloway. The crosses are big-framed cattle, excellent feeders and come early to maturity." The Aberdeen-Angus, as well as the Galloway, might be used in Canada for this purpose. This breed has rendered the highest service in improving the range cattle of the United States. The Texas steer that was once famous in the stories of the wild West has become a black, polled animal that brings the highest prices in the stock yards of St. Louis and Chicago.

Thousands of beef cattle in Great Britain are reared every year from calves that have received little or no milk. The plan followed by the more successful feeders is about as follows: the first week, the calf is fed the mother's milk only; the second and third weeks, three parts of new milk and one part of home made gruel at each of three meals; fourth and fifth weeks, two parts of new milk and two parts of gruel; sixth and seventh weeks, one part of new milk and three parts of gruel; eighth week two quarts of gruel and no new milk. Hay should be given at the fifth week. Where separated milk is available the meal may be eight parts of oatmeal by weight, and one part of ground linseed. This is scalded over night, *i.e.*, take 2½ lbs. with 5 pints boiling water, then boil ten minutes next morning and add 5 pints separated milk with ¼ oz. salt and 2 oz. raw sugar. Where no separated milk is available either of the two mixtures that follow may be used or may be combined with new milk as already suggested: No. 1, 2 parts of linseed-cake meal; 2 parts of oatmeal; 1 part ground linseed, mix with 5 quarts of boiling water over night and boil ten minutes next morning; serve with ¼ oz. salt and 2 oz. sugar. No. 2,—14 parts of linseed-cake meal; 5 parts ground linseed; 2 parts low grade wheat flour; 2 parts locust-bean meal. This requires no boiling, but 3 lbs. should be mixed with five quarts boiling water and sprinkled with salt and sugar. In each case this is a day's allowance for calf, and should be given warm at three meals to calves under three months old, and at two meals to calves over that age. These home-made mixtures are not expensive and have been widely used with good results.

Cattle on the Alberta Demonstration Farm at Olds has taught a useful lesson which is now bearing fruit in the big increase in mixed farming in that province. One or two gentlemen attended the recent sales in Ontario for shorthorns for their ranches near Edmonton.

It is well known that the most profitable gains are made by young animals. The ideal is to raise what is called "baby beef," a class of beef animal that will bring from 40 cents to $1 a hundredweight more than the best market price for finished beef cattle. These young animals should be ready for market at 12 to 18 months. Two such calves will put on as much as 1,600 pounds on the same feed that would be required for a mature steer to put on 600 pounds. The cost is less and the money invested may be turned over more frequently.

It has been urged that farmers should grow and feed sheep, should raise and feed hogs and thus increase the supply of meat. This is all true; but why not raise beef cattle which is equally profitable and may be done at the minimum of expense and labor? The dairy farmers of this country may add to their profits 50 per cent. a year at least without making any radical changes in their farm plans and may turn to profit the surplus calves that are now sold for their hides only.

The tendency of calves and yearlings is to grow rather than fatten, so that fattening is accomplished only by generous feeding. The best roughage to use is probably ensilage and clover or alfalfa hay and this must be balanced with a good rich meal ration of chopped oats mixed with corn or pea chop, oil cake, etc. The idea in feeding is to increase the capacity of the animal's digestive system, to produce thrift and to add flesh. Young animals do wonderfully well on grass. One feeder in Elgin claims that his young steers on a luxuriant pasture increased 400 lbs. each in weight in three months. It is safe to say that young cattle on good pasture or on rape and grass will easily add 100 lbs. each per month. Even with abundant pasture it usually pays to keep up the meal ration. This must, however, be fed with care. Where pastures may be short because of inferior stand of grass or clover, or because of dry weather, an annual pasture sown the first week in May has proven profitable. This consists of 51 lbs. oats, 30 lbs. early amber sugar cane and 7 lbs. of red clover per acre. The pasture should be ready by the middle of June and will carry a mature steer or two calves per acre on fair soil. From this crop the gains in weight should not be less than 2½ lbs. to 3½ lbs. a day depending on the age of the animal. When rape and grass are combined the gains will be equal to the annual pasture or better. When on rape care should be taken that the animals do not overfeed.

The Dexter Monstrosities

Dexter cattle are a native Irish breed. How they have been formed from the Kerry breed is not definitely known, but it is generally believed that a land steward in Kerry named Dexter many years ago through the selection of short-legged specimens of the Kerry breed, established this type of Irish cattle. They are very useful, giving a large quantity of milk and at the same time being excellent beef cattle. One of the great difficulties connected with the use and extension of this breed is that an unduly large proportion of the calves are monstrosities. How this should be so is one of the most puzzling questions connected with stock breeding in the Old Country; as yet no theories in the advanced that will adequately meet the case.

Gabled House of Friendly Windows

An Attractive and Livable Farm Home Where the Convenience of the Housekeeper is Not Overlooked

By GENEVIEVE

A GABLED house with grouped windows, and casements looking out from under the eaves, is strikingly old-fashioned and homelike, especially when built in a setting of tall old trees. The style shown in the illustration lends itself to a variety of materials. Frame or brick with a foundation of field stone would be most commonly used; cement blocks or cut stone give a very substantial appearance; and perhaps the most effective result is obtained by the combined use of brick and concrete as shown in the illustration. The brick columns supporting the porch roof have an air of strength and permanence that every country house deserves.

Especially desirable is a large window space where you are so fortunate as to have a spot among trees to build your house.

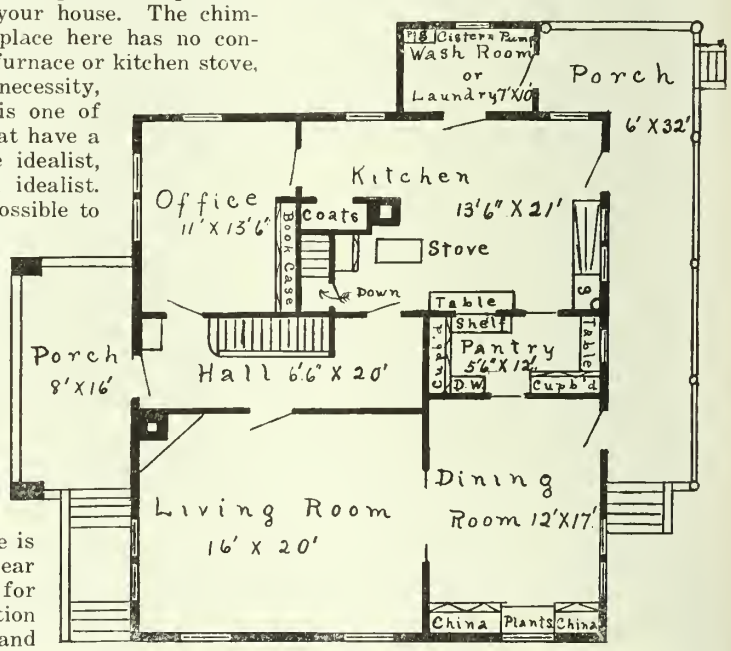
In this number of our series we have departed a little from the most conservative ideas of farm house building in giving a large area of window space. This is especially suitable for shady locations and gives a very graceful, attractive exterior. The sun room could be left out of desired, using twin windows in the middle of the side wall. This is a style that could be carried out in a variety of materials.

The hospitable, friendly atmosphere surrounding a house like this is due largely to the windows. Their number and grouping give a vision of light and sunshine within; the small panes and little square casements suggest old days when the latch string was always out. Especially desirable is the large window space when you are so fortunate as to have a spot among trees to build your house; while you have their shade you also catch every ray of sunlight sifting through.

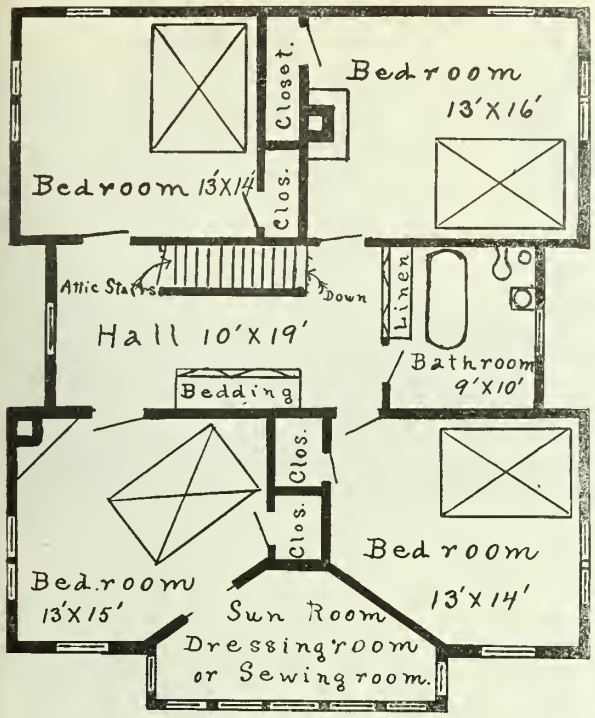
The front entrance from the porch opens into a hall with an open stairway leading to the second floor. We have here a box seat for rubbers, a wall-mirror and hangers for coats. These are more serviceable than a hall-rack. On the left a door opens into the office and on the right, a little farther down the hall is the door to the living-room. Next to the kitchen this is the most important room in the farm house. In this case it is a good size, well lighted on two sides with windows facing the public highway, and the home drive, and is placed convenient to the other rooms. The sliding doors separating it from the dining-room may be pushed back to throw the two rooms into one on special occasions. The country house is not built to satisfy social purposes, but it should afford a place to entertain a crowd of friends or neighbors without seriously inconveniencing the family or making it necessary to move the furniture from one room to another. Especially is this worth considering where there are young people. They have to have their affairs somewhere and the best time to provide a place is when you build your house. The chimney for the fire-place here has no connection with the furnace or kitchen stove, so it is not a necessity, but a fire-place is one of those luxuries that have a real value to the idealist, or in making an idealist. It is next to impossible to sit before a hearth-fire—your own hearth-fire—and not see visions that change the whole color of the working day.

Across the hall and at the front of the house is the office. It is near the front door for the accommodation business callers, and being just off the kitchen is convenient for the family. Besides affording a place to read, write and cipher, this makes a good withdrawing room when the young people make things too noisy in the rest of the house.

Just outside the office door in the kitchen, the space between the kitchen and cellar stairs is walled in for a coat closet. Along the side of the stair wall we have a built-on cupboard, for cooking utensils and supplies used every day in preparing meals. This cupboard being just back of the range with the table not three feet away on the other side saves a great deal of time and traveling. The table is set under a slide in the pantry wall, which may be opened or closed. The wide, five-foot, drain-board of the sink and the well scattered windows help to make this an agreeable workroom. The small room opening from the side opposite the pantry, has the cistern pump and sink, and is intended for a laundry and men's wash-room. As this has an outside door to the back porch the men



Ground Floor Plan.



Second Floor Plan.

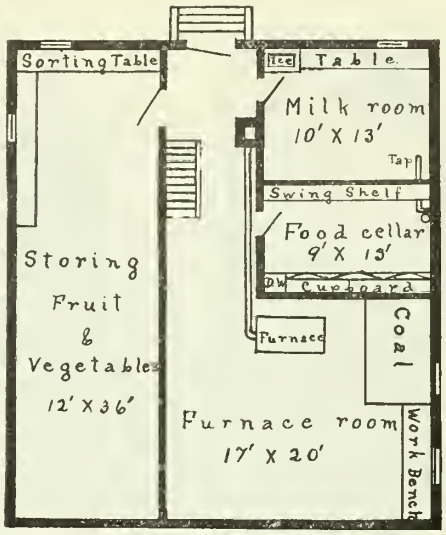
do not have to go through the kitchen and pantry to get to the dining-room—a consideration which carries some weight during the seasons when a lot of hired help have meals in the house.

The features to note in the pantry are the roomy cupboards, the slide and shelf connecting it with the kitchen to save steps in serving meals, the dumb waiter and the swing doors opening to kitchen and dining-room.

The dining-room has a built-in cabinet across one end. Where this is broken by the window a broad shelf coming flush with the cabinet makes an ideal place for house plants—and there is no decoration for a dining-room equal to a few bright, healthy flowers.

The second floor is divided by an eight-foot hall, a good deal of space to waste in a passage-way, but the bathroom and linen closet come off one end and the stairway and closet for bedding take up considerable room in the centre. The rest of the floor is occupied by four bedrooms, a clothes room for each and a sun-room. Each bedroom has three windows making the ventilation problem easy. The sun-room is a charming feature of the house. It may be used for a dressing-room, a sewing-room or a nursery, and when the windows are replaced by screens or even raised as far as possible, it will be as good as any out-door sleeping porch for hot weather.

The plan indicates that it is possible to have a fireplace in two of the bedrooms, though, of course, this is optional. The time when an open fireplace seems most worth while in a bedroom is in cases of illness, so if we were to have a fireplace in one of these rooms I would choose the one next the bath-room, as that would be the most convenient for a sick-room.



Basement Floor Plan.

Of course it is more to the point to build a house, dry, sunny, well heated and ventilated so as to avoid sickness.

The attic will serve its best purpose as a store room and protection for the rest of the house in warm weather.

The basement is partitioned into a large room for storing vegetables and fruit, a food cellar, and a milk room, with the furnace about under the centre of the house in order to get the most benefit from the fire. The pipe from the furnace to the chimney should be a few inches higher than the door of the food cellar

With its graceful exterior, light airy rooms and provision for convenience in doing the housework, this should make a most attractive and livable farm home.

Water Supply and Plumbing for the Country House

The Old Oaken Bucket a Thing of Sentiment, Backaches and Germs

By R. W. TRULLINGER

The writer of this article treats simply and thoroughly that part of the subject of farm home sanitation relating to pure water supplies and the safeguarding of these against contamination. It is a fitting sequel to the discussion of practical methods of sewage disposal which appeared in the April issue of Farmer's Magazine. Suggestive drawings and illustrations are given to fit average cases, together with information intended to aid the farmer, if necessary to modify the designs in order to apply them to his particular needs.

THE "old oaken bucket" may make thrills run all up and down your spine when you hear it warbled from the throats of paint-brown harvesters behind the foot-lights, but viewed from the pump-handle or the crank of a windless, the feeling might better be described as a crick in your back. A water system in the farm house is a legitimate investment for this reason alone. Along with this there is the equally important consideration of safeguarding against contamination, and the safe disposal of sewage.

Many of the germ diseases may be transmitted by water. Typhoid, dysentry, and other intestinal disorders are known as "water-borne" diseases, and if they may be carried by water, it is of the greatest importance that every precaution be taken to insure a pure water supply.

Surface water supplies are those most liable to pollution, and authorities agree that they are the most unsatisfactory for farm use. Streams and ponds receive the greater part of the surface wash from the immediate neighborhood, and in many cases barnyard or stockyard drainage from points remote from where the water is taken for household use. Streams or ponds located in pastures, manured fields, or where stock can gain access to them, are polluted. Sometimes sewage and house drainage are emptied into streams and ponds. Rainwaters from the roof are polluted by dust, dirt, and leaves, which collect in the eave-troughs.

Surface water supplies should therefore not be used for household purposes, not even for washing milk cans or for laundry purposes, unless no other supply is available. And it may be safely assumed that the person who drinks water from surface supplies endangers

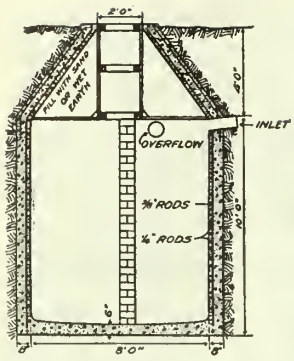


Fig. 1.

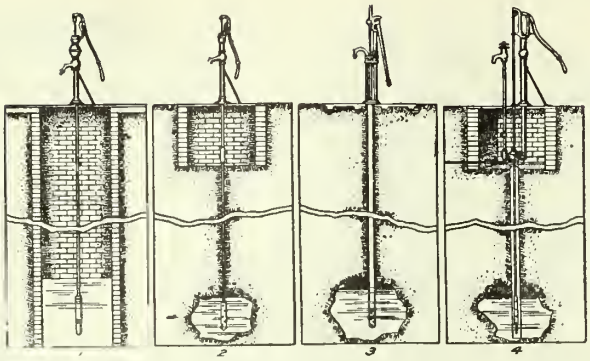


Fig. 3.

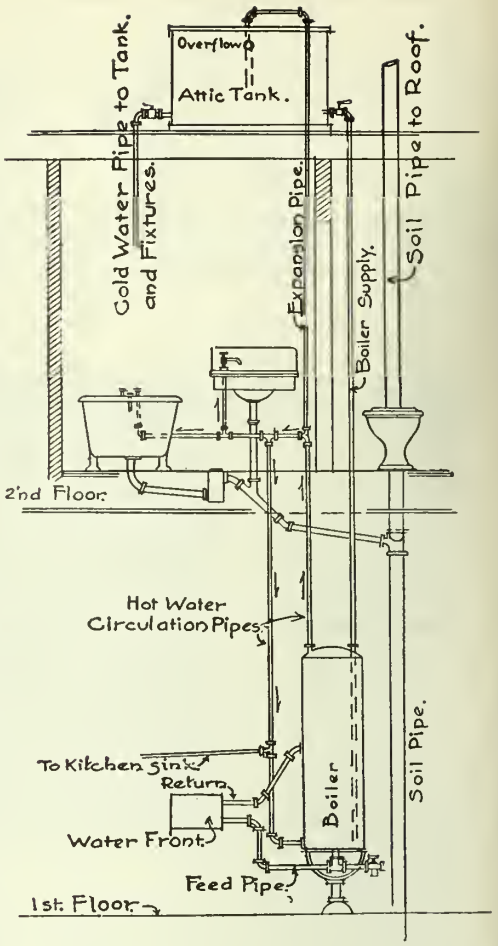


Fig. 5.

his health if such supplies are not first protected from the sources of contamination as far as possible, and then purified.

Cisterns

In localities where underground waters are hard to obtain, cisterns may be used for the filtration, partial purification, and storage of rain water, and surface supplies.

The cistern should be of water-tight construction, to prevent leakage and to prevent pollution from the neighboring soil. It should have an overflow drain and a tight cover. There should also be suitable provision for straining or filtering the water previous to its entrance to the cistern.

The cistern should ordinarily be in two compartments, with a filter wall or porous brick between. One compartment serves then as a settling chamber and the water receives a final filtration before entering the storage compartment.

Concrete is probably the most sanitary and durable material for cisterns. In general, the walls and floor should be six or eight inches thick and well reinforced and the concrete should be carefully proportioned and mixed. A mixture of 1 part cement to 2 or 2½ parts of clean sharp sand and 4 or 5 parts of clean and fairly small crushed rock or gravel is satisfactory for fairly water-tight concrete. The inside surface should be coated with a 1 to 2 cement mortar.

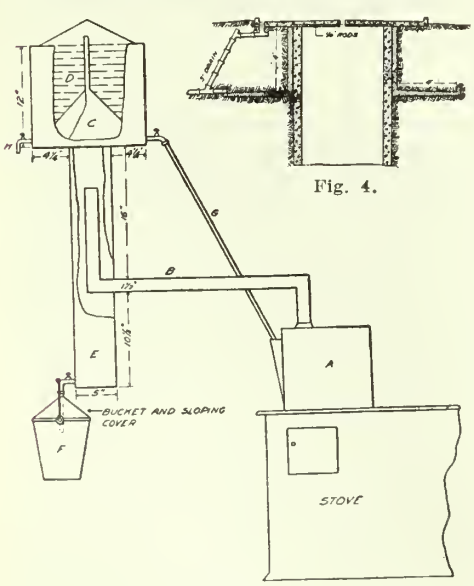


Fig. 4.

Fig. 2.

Figure 1 shows a circular cistern of average size sufficient for a family of six or eight people.

Distillation for Alkali Waters

Sometimes a simple still can be conveniently used on a kitchen range to provide distilled water for drinking purposes. Saline (alkali) waters are satisfactorily treated in this way. Figure 2 illustrates a form of still which has been found effective and convenient for household use. It has the advantage of being inexpensive and can be made by any tinner. The still consists essentially of a water boiler (A) on the range, having a capacity of 1½ to 2 gallons, and a condenser suspended at the proper height from the ceiling. The pipe (B) conveys steam to the condensing chamber (C) and is kept cool by water in the compartment (D). The distilled water collects in (E) and can be drawn off from time to time or allowed to run continuously into the bucket (F). The metal used in the construction of the still should be well-tinned copper and no solder should be exposed to the action of either the steam or the distilled water.

The Farm Well

The farm well, especially a shallow-dug well, should be located somewhat above the barns, buildings, yards, and stock pens, or at least in such a position that the surface drainage from all possible sources of animal and vegetable contamination is away from the well. The location should also be as far removed from these sources as convenience will permit.

To properly safeguard wells against outside contamination, first, all sources of contamination should be removed as far as possible. If local conditions and prices will permit, it is a good idea to provide impervious floors with water-tight drains for farm buildings and stock pens. Under the same conditions concrete manure pits might well be provided to not only prevent the liquid manure from polluting the neighboring soil, but to save the manure. No garbage, manure, or rubbish should be dumped into sinks or basins in the immediate neighborhood, and these should be fenced off and kept free from polluting matter. The house should be provided with some safe method of sewage disposal, while slops and garbage from the kitchen should be deposited in tightly covered garbage cans and disposed of by burying in the fields, burning, or feeding to the pigs. The use of privy vaults and leaching or overflowing cesspools should be absolutely avoided, since they are likely to be sources of the worst contamination. Second, the farmer should become acquainted with the various types of wells and the best methods of protection, and the well should be so protected as to exclude filth from those sources of contamination which it is impossible to remove or which have been overlooked.

Types of Wells and Methods of of Sinking

In the selection, location, and sinking of a well it is always a good idea to consider permanence in addition to safety. This will depend on the kind of well used, and one should be acquainted with well types and methods of sinking. The well should penetrate to levels below that of the ground water surface in the driest seasons.

Fig. 3 illustrates four different common types of deep and shallow wells. No. 1 shows a dug well, with pump, which may be lined with either concrete or cement brick. No. 2 shows a driven well which is constructed by attaching a point to the end of the pipe and driving the pipe into the ground until water is reached. The point is provided with a short length of pipe with perforations which prevent the water from entering the pipe and keeps out the sand and gravel. This arrangement is best suited

Continued on Page 77.

Digging Saskatchewan Gold

By F. M. CHAPMAN

They grow great oats and they tell stories of great yields. R. E. Everest, B.S.A., who may be seen in the picture, can tell as big ones as anybody.

A view from the G.T.P. of the Scott Experimental Farm Gardens.

The Environs of the Tramping Lake Country are Being Blessed by the Experiments of the Scott Farm

A farmer in Saskatchewan who loves his business has perhaps one of the grandest opportunities in Canada to make good. With a deep, rich soil filled with the plant food of ages, with lots of sunshine and with several experimental farms, this province has untold riches for the man who will dig them up. There is little knowledge required as to the method of extraction of the dollars from this soil. Observation and regard for the successes and failures of other men will teach the ordinary farmer how best to go about it. The best experience is too slow a teacher for the individual, and where the Government can step in and aid in the experimenting, a great deal of time and money is thus saved to the farmer. The writer had the experience of visiting this promising experimental farm at Scott, and has summed up his observations in this article. Photographs were obtained at the time of the visit.

THAT man, who has not stood bareheaded in the wheat fields of Central Saskatchewan during one of October's many sunny days, has missed an inspirational vantage point in the proper appreciation of Canadian country life.

On all sides, the visible radiations of sun-energy through the ozone-active atmosphere, impel into one's being the joys of enterprise and accomplishment. Far as the eye can wander, wheat fields and threshing scenes repeat. Modest homes of brick and Douglas fir period the plains. Uprising stacks of straw monument the massive wheat bins of the prairie. Bright stubbles make patchwork of gold with here and there the contrast heightened by an alfalfa green or a fallow's ebony. The trailing smoke of commerce winds among the serried elevators that mark long leagues of homestead sections. It is a vision that leaves its after images. They linger farther than the day; and warm fresh into animating life with the myriad fire-tongues that thread the woof of night.

This is civilization's mark. This is the white man's triumph. The husbandman has beaten his battle axes and tomahawks into sickle sections and cylinder spikes, and the great spaces of the northland scintillate and pass before and beyond. The dream of peace is upon us and silently we move its rhythm.

Out from South Saskatoon we pass over the level roadbed of the G.T.P. trailing westward. The spell of the golden days and happy farms of the Tramping Lake district draws us on to Scott. Across a beautiful vista where reality trembles with mirage, the elevator shafts of Wilkie marks the C.P.R.'s hurrying steel. Everyone is busy. It is the hour of wheat currents. The spout must not clog nor run idle. And so the little gasoline engine grunts laboriously away as the unloading device by the trackside delivers the slippery, shining, elusive flax to its transit-car. Up the planked gangway four monster Clydesdales are bringing 120 bushels of wheat to the self-tilting elevator bins. Yonder from a wayside car three German and Norwegian newcomers sweating good humor and broken English, heave their scoops to the waiting car. Hard work it is but all the teams cannot enter the elevator floors. Time is the essence of this hour's labor. The wheat is coming and the flax is flowing.

Over at the railroad fence a big slough is frozen over. A busy thresher's water tank is backed up to the place and a lively Ontario "harvester" plies an ax on the two inches of ice and soon the suction hose of a double acting pump is drawing the brackish fluid into usefulness. And so the game goes on.

No wonder the people of the Tramping Lake district stop to admire the flowers of this farm.

Ice, yes, ice, but hold! down by the road yonder a mat of color strikes the eye. Scott's experimental farm has specialized in flowers and lawns, and the open-eyed pansy, the Quaker brown mignonette and belated asters defy the ice-king's breath and trail their glory on and on into the very caverns of winter.

Bob Everest, as he was called familiarly by his college friends at the O.A.C., has been deputed by the agricultural department of the Dominion to delve into the mystery of Saskatchewan flora and fauna and to introduce and try out the white man's introductions along these lines. And he is doing it. We found him running a 6-h.p. gasoline engine out in the open behind

Cultivating the Manitoba Maples, the first year from seed. The other trees in the nursery may be seen to the left.

the paddocks back of the big barn.

It was threshing time. The little bit of a machine, such as one only sees on Government plats or in some backward farm in Eastern Canada was buzzing and shaking away in an effort to show a handsome yield from the plat of Golden Vine peas that had certainly made a handsome showing of vines.

The Farm Lays Well

The Scott farm is about level. The soil is a rich dark loam, a slight eminence at the north-east corner forming the natural location for the buildings. A square house and office combined adorns the spacious lawns where various shrubs with labeled Latin names were struggling to establish their right of domain on prairie soil. Every modern convenience is installed such as water service, telephones, dumb-waiters, bath rooms, laundry chutes and sun-room. Only this, the sun-room was on top of the house, commanding a veritable debacle of sunshine and horizon. On every side the reach of human activity on farm after farm, told one of the real value of this developing plant here among the choicest galaxy of farmsteads.

Down past a sundial of unerring judgment which had recorded for this October about 200 hours of sunshine, the broad drive-ways led to the stables and barn. Here ample provision had been made for housing and feeding the seven horses and foals, the hogs, and the few cows just being introduced. Behind these barns in the paddocks were the Clydesdale mares with their foals. Out over the farm, field operations were being hurried along preparatory for winter.

R. E. Everest, B.S.A., is an old York Co., Ontario, boy. To be more exact, a Scarboro farm graduate, and that carries a big recommendation. Scarboro farmers, the seed of old British settlers, have a reputation of being the best plowmen, the cleverest farmers, in that old mother province. Tenant farmers are scarce. There nearly man reigned over his own acres, as proud as the Country Squire of the homeland.

Where is the Saskatchewan gold? In her soil, her climate, her atmosphere, her winters! Yea, greater than all Klondike and richer than Porcupine, the varied loams of the great grain province are awaiting the proper treatment of its ores. And R. E. Everest is pointing the way. The experimental farm is opening up the pay-streak. When their reduction process becomes generally initiated, and when the shining wealth of this rich province is thus laid bare, there will be more alfalfa fields, more trees, more cultivated fields, more comfortable homes. Everywhere hogs, cattle, and sheep will turn the unfenced prairie sod into animated and prosperous feed lots.

Going Into Livestock

The money stringency of the past year has taught farmers the needed lesson of spreading their farming energies over many other things than grain growing. There is unlimited gold in the rich black soils of Saskatchewan. These soils in places are incredibly deep. Around Regina, where sewer work revealed the depths, one might venture the assertion that the soil would never wear out. Some farmers have cropped the same field continually for over 25 years with wheat, and the returns of the last crop were good. Yet this is poor policy. Diversified farming will bring bigger results and where proper rotations are practised the yields will increase just as they do in the older parts of Ontario. The best farmers, even on these rich sections, practise summer-fallowing and a wise rotation. The pest of weeds is one thing that demands a cleaning culture every few years. Then again there is a greater disposition among wheat farmers to go into dairying, hog-raising, poultry farming, and livestock husbandry. This requires that soiling crops, pasture crops, roots and in some cases corn be sown. Alfalfa is gaining its way slowly. It will come soon and bring blessings with it.

This is how the Scott Experiment Station is helping to solve the questions that agitate the enterprising farmers.

Work on the land in 1913 began early in April and the whole year was a big one for this big province. In Ontario, where many of the settlers come from, it was considered fairly early if they could get their seed drills to work by the last week in April. Grain appeared above the ground in Saskatchewan last year by April 21st. Of course, not every season here, as in the East, gets off at so favorable a start. But on the whole the Province of Saskatchewan compares very favorably with any other in the Dominion as a good place for a farmer to live in.

Experimenting With Wheat

Five varieties of wheat were sown on the plots here last year, on the 16th of April, at the rate of seven pecks to the acre. The land had been summer-fallowed in 1912. Owing to the good seed bed the grain got a good start but the light rainfall early in the growing season, no doubt, curtailed results.

The following table will show the

Continued on Page 65.

The two Clydesdale brood mares had two as pretty foals as one would wish to see.

A 50-Acre Mistake

How $100 per Acre was the Bribe that Induced a Young Farmer to Throw Away $5,000

By MacKENZIE HALL

Too many young men are leaving the farm with the expectation of having a nicer, easier and more respectable job at some other occupation. When they find themselves an underling in a city office with the living expenses amounting up to the limit of their salaries, and their enjoyment of nature confined to a few holidays which they take on a run back to the farm, their mistake gradually grows upon them. The present instance is of an Ontario boy, who, after two years, has realized just what a mistake he made in selling one of the prettiest 50-acre farms that lay on the north shore of Lake Ontario. It was a financial mistake also, as his successor fully realizes.

I REALIZE now that I made the mistake when I consented to my father selling our fifty acres in Ontario. The farm was situated on a leading through highway. An electric line was proposed to parallel this road. We were only twenty-eight miles from the largest city in the province, and four miles each way from two towns.

On our farm were 225 apple trees of choice varieties just coming into full bearing. We had as convenient and as nice-appearing a house as existed in the countryside, while the farm buildings were substantial. The soil was a clay loam, easily worked, naturally well drained. In fact, it was a choice location for a farm home.

But the work of the orchard and farm worried my father when it was impossible to secure daily labor. My mother was sickly and the securing of inside labor was just as difficult. One day the thought came to father that it would be just as well for us to sell out and retire to the nearby town where the needs of labor would not be great. I was old enough to have been married, but I had no inclination that way and allowed the farm sale idea to gain headway. Soon a farmer came along and on hearing our land was for sale offered us $100 an acre. The price was a new standard in the vicinity. It touched our vanity. We all thought it was too good to miss, and in a moment of weakness, as a certain politician of present fame would say, we closed the deal. The sum of $5,000 for this little place seemed mighty big.

Our next move was to find a suitable town residence and the best we could do was to rent a rather poor-looking place at $8 per month. It had no convenience and we decided to buy a lot and build on it during the next summer.

Going to Town

A quarter-acre-lot was purchased for $150. We spent the whole summer in building. We did hard work ourselves in excavating and teaming the sand, stone, brick, and lumber. It was a busy summer's work, and I had no time to consider the situation fully.

But after becoming comfortably settled in our new home, I had a chance to reckon at what it had cost us.

The two of us had spent the whole summer's labor on the house-building operation. We did our own teaming and so saved extra payments, but then we were earning nothing. We had no farm and no apple trees to bring in a revenue, except the paltry interest we were getting on the deposits in the local bank.

A calculation of the cost of our house resulted in something like the following:

Value of lot	$ 150
Material for house	1,200
Mason's work	100
Carpenter's wages	200
Plasterer's wages	100
Painter's and grainer's bills	150
Pump and water service	100
Cement walks	25
Outbuildings	250
Incidentals not looked for in finishing, etc.	300
Total	$2,575

Thus we spent over half what our farm sold for and we had for it a house and lot, non-revenue producing. Besides this we had given our labor for six months into the building. Valuing this at $1.50 per day at the least we had spent $450 more.

It Took Over Half the Farm

Thus we had put 60 per cent. of our farm into a house in the town where we had none of the pleasures of the farm, and all the discomforts except the labor. I now see that I had made a big blunder when I consented to the sale, or rather refused father's offer to me to take the farm.

The farm has since risen in value to $200 an acre. The orchard produces annually from $400 to $800 according to the weather and prices. This alone is pure gain, for the rest of the farm readily supports the farmer and his family. That means that we have given, over false notions, an investment that we waited twenty years for, of easily $5,000. For if we calculate the annual returns at $500 net, that means at 10 per cent., a capital of $5,000 or as much as we got for the whole farm.

Besides this we had a convenient house, handy to electric cars, with a country view unexcelled in that part of the country. I recognize that the

The house on this farm commanded a view that was the envy of the countryside. Perhaps there is no more coveted life than that of the farmer in his comfortable hilltop home in the summer time.

same property would be worth much more with the increasing years, while the farm labor proposition could have been solved by us erecting a cottage on a corner of the farm for married help that would have cost us only one-third of what we expended in our house in town and left us the big earning power of the farm and orchard in the bargain.

The Retired Farmer

And now, where am I? I am a retired farmer in a town where I can be of little use. If I find employment to pass my time, I am in the position of a day-laborer or an unskilled assistant. I have distinctly lowered my status socially and cut off my income.

Of course, my position is not irretrievable. Our house would sell for enough to let us out handsomely, but the joy of the old farm cannot be duplicated. It would be impossible to locate in that vicinity on so desirable a property. Any property in that section has advanced fully 50 per cent. in price, so that in that regard I cannot re-establish my position. I can yet secure good farms away from the front at the same figure, and for even less than we received and it might be a good thing for me to do so. For I realize that the realization of a mistake is the next thing to repentance and restoration. The joys of farm life, the ability to turn our executive abilities to good advantage, and the possibilities of a commercially successful farm-manufacturing plant are so alluring that that farm boy is ill-advised who looks beyond the borders of a good farm for the proper scope of the business faculties and inclinations that he imagines he possesses.

The needs of the consumers of Canada are so great and the waste on our farms is so extensive that there are plenty of fortunes lying around for the men who will assist us in establishing canneries, evaporators, jelly and jam factories. The difficulty that comes from a lack of private capital and private enterprise can be overcome by the co-operation of all farmers. When we, as a body, learn to hang together, as do the manufacturers and labor unions, we will accomplish much for our own good besides adding to the food supply of the world and securing a greater uniformity of comfort for all men who call themselves farmers.

I believe I'll hun't up a nice fifty acres and begin again. There are no joys in an aimless life. That farmer's son sees crooked who does not feel that his position at the present time on the farm is one of the most enviable of all jobs. For many business men are showing how great an opportunity for executive and managerial ability is open to agricultural life.

Sun-Dried Fruit in the Okanagan

By E. B. B. REESOR

MR. W. H. Lyne, Assistant Fruit Inspector for the Government of British Columbia, has been experimenting last year in sun-drying fruit in the dry belt of the Okanagan Valley with a view to promoting another industry for the fruit-growers. Mr. Lyne lived for some time in Southern California where the conditions for sun-drying fruit are ideal and where he had much experience in studying the process and in marketing the results.

In speaking of his experiments in the Okanagan, Mr. Lyne said, "Peaches and apricots sun-dried in Naramata, on the east side of Okanakan Lake, were exhibited at the Provincial agricultural show at New Westminster and in quality and appearance were equal to the output from the Californa sun-drying grounds."

The fact that a grower may dry and market his own fruit in the dried state is of great advantage. Sometimes the market for fresh fruit is congested, for one reason or another; sometimes the fruit ripens so quickly that it is impossible to pick it at the right stage for shipping or for canning, and it is the fruit that is just ready to eat that is at its best for sun-drying. Culls and left-overs should be fed to hogs, not dried and sent to the market as Okanagan produce.

The process of sun-drying the fruit is very simple and applies to apricots, peaches, plums, prunes, apples, pears and some kinds of grapes. "In the experiments in the Okanagan we first made our own outfit consisting of wooden trays and a sulphur box. Ours were one-man trays three feet square (though trays for two men are three feet wide and six to eight feet long), made of white sugar pine. For sides and ends we used 1½-inch square material. Slats for body of tray 1¼-inch thick, 6 inches wide and 3 feet long. For strapping over nailed ends of slats and for the one long strap down the centre of the tray a 1-inch lath ¼-inch thick was used. We put the trays together by laying the side and end pieces on a level surface and tacking them together. Then we tacked the slats on to the other side pieces with temporary small nails. Placed the 1-inch strapping along the ends of the slats and nailed through strapping, slats and side piece. Then we nailed the centre strapping to the middle of the tray using a blunt iron or axe head underneath each slat for a clincher.

For the sulphur boxes we got some common matched lumber, enough to build a bottomless box to accommodate the size of trays we made; nailed slats on the inside, one above the other, on which to slide the trays and fitted the door snugly enough to confine the fumes within the box.

The empty trays were placed within easy reach of those who were cutting the fruit and arranged so that the large and the smaller pieces could easily be put on to separate trays, so that even drying of the fruit was assured, as the smaller sizes dry more quickly than the larger. The cutting was carefully done, a clean circular cut right around, the pit removed, and the fruit placed cut side up on the trays. When the trays were filled, we ran them into the sulphur box, in which had been placed one pound of powdered sulphur on an old piece of newspaper in a slight excavation on the earthen floor. The edges of the paper were set on fire; when the sulphur caught, the door was closed tightly, and for two hours the fruit was exposed to the sulphur fumes. At the end of that time the door was opened, and, when the fumes cleared off, the trays of fruit were taken out and spread in the sunshine. The drying outfit was convenient to the ground on which the trays were spread. and the drying plot was selected with a view to its freedom from dust. If dust blew in from the road near-by we watered the road.

We stacked the trays at night to prevent the possibility of moisture coming in contact with the fruit.

To find when the fruit was dried to perfection we took a piece of the fruit and bent or pressed it with the forefinger. When there was no sign of any soft, pulpy substance remaining, the fruit was stacked up until it had cooled off. It was then taken from the trays and put into boxes or bins, where it went through a natural sweat before being packed and put on the market. This year the small-sized apricots dried in about six days, and the larger size in nine days; but in hotter seasons it would likely take a day or two less. In drying pears, the fruit should be placed in clean water directly it is peeled and cored, keeping it immersed until ready to place on the trays, and then put into the sulphur box as quickly as possible, so that it will not discolor.

Prunes dried whole with the pits in them are dipped in hot lye water in order that the skin may crack. They are not sulphured, but placed in the trays direct from the lye bath and put into the sunshine.

In order that there shall be no waste in drying fruit, the British Columbia fruit-growers are advised to build evaporators, so that the latest varieties of fruit may be dried when the days have become shorter and the sunshine less heating.

One advantage of sun-dried fruit lies both to the grower and to the consumer. It was one way by which both the grower and the consumer got the better of the transportation companies, for the grower extracted the water before the fruit was shipped and the consumer added it when he was ready to use it, whereas, in the shipment of fresh fruit, it cost more to carry the water than the fruit itself.

Spanish Gold

By GEO. A. BIRMINGHAM
Illustrated by DUDLEY WARD

The Story of a Search for Treasure on the Coast of Ireland and the Amusing Situations which Arose

SYNOPSIS OF PREVIOUS CHAPTERS

The Rev. J. J. Meldon, curate, of Ballymoy, a village on the west coast of Ireland, while visiting his friend, Major Kent, comes across an old pocket-book of the Major's grandfather, in which he finds an account of some treasure, supposed to have been hidden by the Spaniards of one of the vessels of the Spanish Armada on the Island of Inishgowlan. The Major possesses an excellent yacht, the Spindrift, and they decide to take a trip to the island to search for the treasure, which Meldon is very confident of finding, but of the existence of which the Major is very skeptical. Meldon also owns a yacht, the Aureole, a worthless tub, which he lets to a Mr. Langton, who, with a friend, wishes to take a trip round the coast. On arriving at the island, Meldon and the Major find Higginbotham, an old college chum of Meldon's engaged in surveying the island for the Government, and dividing it up into allotments. He informs them he is prevented from completing his work, by the obstinacy of one old man, named Thomas O'Flaherty Pat, who owns a piece of land in the very centre of the island, entirely surrounded by other people's land, but which he will not part with at any price. Meldon, not wishing to divulge the real reason of his visit, tells Higginbotham the Major is a Government mineralogical expert who has been sent to examine and report on the island's mineral resources. Meldon and the Major start to explore the island and discover they are being followed everywhere by an old man, who turns out to be Thomas O'Flaherty Pat, and who declares he cannot understand a word of English. Meldon tells him they are naturalists looking for sea beetles, and manages to get rid of him; continuing their search they find an inlet with a hole, which is only visible at low tide, and here Meldon decides the hidden treasure must lie. On returning to the yacht they notice the arrival in the harbor of the Aureole. The following day Meldon starts for the inlet and the cave, and on his arrival discovers a man, who is being lowered over the cliff to the entrance of the cave. This turns out to be a Sir Giles Buckley, the friend who is with Langton, on the Aureole, and son of a neighbor of the Major's, who had lately died. Sir Giles would also have heard of the treasure, as his grandfather was a friend of the Major's grandfather, and had visited the island with him. After some discussion, Sir Giles calls out to Langton to haul him up, and both he and Meldon depart, as the tide has nearly covered the hole in the rocks. Meldon and the Major return to the yacht. The next day Meldon in order to convince the Major that Sir Giles and Langton are watching them, puts off in the punt to the island. Sir Giles immediately does the same, returning when Meldon returns. The two couples continue to spend the day on the deck of each yacht keeping watch on each other.

CHAPTER X.—*Continued.*

AT about four o'clock there was a stir on board the Aureole. Langton dragged the punt alongside. He and Sir Giles got into her and pulled for the shore. Meldon, watching them intently through his glasses, observed that they took no rope with them. He made up his mind that they did not intend to descend the cliff. The tide was still too high to permit of any one entering the hole. Yet it seemed evident to Meldon that this expedition to the shore must have some object. He became very anxious to discover what they were at. It was easy enough to row on shore after them and then follow them, as they had followed him in the morning. But he realized that on an island without trees or hedges it would be totally impossible to follow them without himself being seen: and their plan, whatever it was, would certainly not be carried out before his eyes. Scanning the land with his glasses, he detected Mary Kate sitting in the shade of Higginbotham's house to watch the strangers land. His mind was made up in a moment. He shook the Major.

"Give me another sixpence," he said; "I'm going ashore."

"My money's in the pocket of my other trousers," said the Major; "and they're hanging beside my bunk. Take what you want and for Heaven's sake leave me to have my sleep in peace. It's the only comfort I get since I came to this island."

Meldon made all the speed he could in the canvas punt, a craft singularly ill-suited to a man in a hurry. He reached the pier shortly after Sir Giles and Langton had landed. Mary Kate, who had hesitated for some time between the desire to follow the strangers and the hope of another sixpence from the approaching Meldon, was on the pier to meet him. She grinned amiably when he greeted her.

"Mary Kate," he said, "I've got another sixpence for you. You'll be the richest girl in the island in a few days if this goes on."

"I will so." She spoke in a tone of conviction.

"Well now, go you up after those two gentlemen and just watch what they do You needn't go too close to them. And, listen to me now: if it should happen that they speak to you, just you take a leaf out of your grandda's book and answer them in Irish, 'Ni Beurla'—what do you call it? You know how to do it, don't you?"

Mary Kate nodded. The instructions were not absolutely lucid, but she grasped their meaning.

"Not another word out of your head now, mind that. And look as stupid as you can. I'll run down and pay a visit to your aunt. Isn't she your aunt?"

"She is not."

"Well, you know who I mean, anyhow. Mrs. O'Flaherty beyond there, the one that owns the baby with the nice fat legs. You drop down there as soon as ever those two gentlemen go back to their yacht, and tell me what they've been doing. I needn't explain to you, Mary Kate, that I wouldn't be setting you on a job of this kind if those two fellows weren't a pair of bad ones. The fact is they're land-grabbers—the worst kind of land-grabbers. That will probably convey to you better than anything else the sort of fellows they really are."

He noticed that Mary Kate's attention had wandered, but he continued speaking for his own satisfaction.

"If that isn't exactly the literal truth, as people like the Major would say, it's the nearest thing to the truth that you're at all likely to understand. It will convey to you a perfectly true idea of the character of the men. You understand what I mean, Mary Kate, when I say they're land-grabbers, don't you?"

The child wasn't listening to him. Her eyes were on the now distant figures of Sir Giles and Langton. Even if she had listened, it is doubtful whether the word "land-grabber" would have conveyed anything to her. Politicians rarely, if ever, visit Inishgowlan, and the people, even the grown men, are uninstructed in the simple principles of modern nationalism. It had never been worth the while, even of a publican, to grab the land on Inishgowlan. In any case, whether she had understood him or not, Meldon's motives for having the strangers watched would not have interested Mary Kate. It was sufficient for her that she was to be paid sixpence for doing what natural curiosity would have prompted her to do without a bribe.

Mrs. O'Flaherty seemed surprised to see Meldon. She was churning, plunging up and down an old-fashioned dash in the most primitive kind of churn. She was dressed in a sleeveless garment, tucked in to an old red petticoat which seemed likely, as her body swayed, to work its fastenings loose and fall off.

Drops of milk, splashed from the churn, bespattered her. She was exceedingly hot, partly from her exertion, partly with annoyance at the lamentable howls of her baby, who had of necessity been left to the care of the old woman in the room off the kitchen. She was at first far from being well pleased at seeing a visitor. She was not, indeed, embarrassed by the scantiness of her costume, but she foresaw that in mere politeness she might be obliged to stop churning, and to stop at a certain stage of the process is fatal to the production of butter. Meldon's first words reassured her.

"Give me the dash," he said, "and go you in and get the baby."

"I will not," she said. "I'd be spoiling your good clothes on you if I let you do the like of this work."

"Did you never hear that there's no luck when the stranger that comes in doesn't put a hand to the churn?"

"Faith, and that's true. But who'd think of the likes of you knowing it?"

"I know more than that," said Meldon. "I know things that would surprise you now, wise as you are. Give me the dash, I say."

He took it from her and began to work vigorously. Mrs. O'Flaherty watched him.

"Maybe now it isn't the first time you've done that," she said.

"It is not, nor the second. But go you and take your baby. The shouts of him is enough to stop the butter coming."

She returned in a few minutes with the child, quickly pacified, in her arms.

"Where's himself?" said Meldon. "Why wouldn't he be giving you a hand at this work?"

"Sure he does do a turn for me odd times, when he wouldn't be earthing up the potatoes, or saving the hay, or burning the kelp or the like of that."

Meldon began to feel hot.

"The butter's a mighty long time coming," he said.

"You may say that. Whether it's the warmth of the day or maybe—but sure you're tired. It's terrible hard work for them that's not used to it. Give it up to me now."

"Very well; I'll have a try at the baby. Come here to me, Anthony Tom. Did you say Anthony Tom was the name you had on him?"

"It is not, then, but Michael Pat."

Meldon took Michael Pat in his arms. He was very successful as a nurse, but he found the work almost as hot as the churning. Michael Pat had reached the age at which happiness is found in perpetual motion, and it was necessary to keep on jumping him up and down.

"I'll tell you what it is," said Meldon at last. "I'd rather be saving hay or burning kelp, or doing any other mortal thing, than trying to mind a baby and make butter at the same time. Men have a much better time of it than women as things are arranged at present."

"They might," said Mrs. O'Flaherty, "but what would they be doing if it wasn't for the women?"

"That's true," said Meldon; "but it isn't saying that men don't have the best of it."

"And for the matter of that, how would the women get along wanting the men?"

"There's something in that, too."

"Sure, God is good, and the troubles He does be sending is no worse for me than another. If so be that Michael Pat doesn't be cutting or burning himself when I have him reared to be out of my arms, I've no cause to be complaining. And himself is a good head to me."

Meldon danced Michael Pat vigorously. The sweat ran down his face, but he stuck to his work, realizing more and more clearly the strenuousness of a woman's life. At last he spoke again, jerkily for want of breath.

"Mrs. O'Flaherty, ma'am, tell me this. Is there e'er a branch of the Woman's Suffrage Association in this island?"

"I never heard tell of any such a thing."

"Well, take my advice. Found one at once. It may not do you much good, but it will relieve your feelings. You're suffering under an intolerable injustice."

"Is it the Government you mean?" said Mrs. O'Flaherty, whose husband occasionally read a copy of the Ballymoy Tribune.

"It is not; it's the men. What you want is what's called sexuo-economic independence of women. Just wipe Michael Pat's mouth with something, will you. I haven't a handkerchief on me, and he's dribbling worse than I could have believed possible."

The half-door of the cabin was pushed open, and Mary Kate entered. At the sight of Meldon with Michael Pat in his arms she stood still and grinned broadly.

"Thank God!" said Meldon fervently. "Come here, Mary Kate. Sit down on the creepy stool there by the hearth and take the baby."

Mary Kate hung back, still grinning.

"Do what the gentleman bids you," said Mrs. O'Flaherty.

Mary Kate obeyed reluctantly. She foresaw that it might be very difficult for her to escape from Michael Pat if she once accepted the charge of him. She had the makings of a feminist in her. She valued her independence.

"Tell me now," said Meldon, "did you do what I bid you?"

"I did," said Mary Kate.

"And have the gentlemen gone back to the yacht?"

"They're after going this minute."

"And where were they?"

"Beyond."

"Listen to me now, Mary Kate. I'm not going to spend the rest of the day dragging information out of you as if each word you say is a tooth that it hurts you to part with. Tell me now straight—and no more nonsense—where did they go?"

"It's yourself that's the stubborn little lady," said Mrs. O'Flaherty. "Why wouldn't you be speaking to the gentleman when he wants to be listening to you?"

"They were up beyond at my grandda's."

"At Thomas O'Flaherty Pat's! Were they talking to him?"

"They were not, then, for himself wasn't in it."

"What were they doing?"

"Looking at the Poll-na-phuca."

"At the what?"

"That's the hole that there does be in the field back west of the house," said Mrs. O'Flaherty. "Poll-na-phuca is the name there does be on it on account of them that's in it."

"Is that all they did?"

"Sorra a thing else."

"Well," said Meldon, "that beats all. I must be getting away now, Mrs. O'Flaherty. I've had a delightful afternoon. Goodbye, Mary Kate. Be kind to Michael Pat. Remember that you were once that size yourself, and somebody had to sit on a stool and hold you."

He walked down to the seashore, selected a large flat stone, and sat down on it. He was very much puzzled by the account which Mary Kate had given him of the movements of Sir Giles and Euseby Langtou. He could not understand why they had gone up to Thomas O'Flaherty Pat's cabin or why they had looked at the hole in the field. He recalled the appearance of the cabin. It was a very dilapidated place, standing by itself two fields higher up than the cottage in which Mary Kate's father lived. He went over all he knew about the field with the hole in it. It was, so Higginbotham said, a very small and barren field. There was no fence round the hole; Higginbotham had lamented that. A heifer had fallen into it and got killed. There was nothing, so far as he could see, which could possibly interest Sir Giles about the cabin, the field, or the hole. Why should a man, out on a search for treasure, care to view the scene of a heifer's death? A heifer is not a very important animal, even on Inishgowlan. He recollected that Poll-na-phuca meant the fairy's hole. He had understood from Higginbotham that the place was regarded by the islanders with some awe as the home of malevolent spirits. But this threw no light on his problem. He could not suppose that Sir Giles was an amateur of folk-lore, so enthusiastic as to suspend his treasure search for the purpose of investigating a local superstition, however interesting.

Meldon's pipe went out, half-smoked. He wrinkled his forehead and half-shut his eyes in bitter perplexity. It hurt him that he could not understand what Sir Giles had been doing. At last he rose from his stone with a deep sigh and walked ten or fifteen yards along the shore. He found another flat stone and sat down on it. He knocked the plug of tobacco out, refilled his pipe and lit it. He deliberately gave up the problem which he could not solve, and set himself to work on another. He decided that he must himself reach the hole where the treasure lay at the earliest possible moment the next day, and that Sir Giles must be prevented from following him. He smoked steadily this time, and his face gradually cleared of the wrinkles the other problem had impressed upon it. At last he smiled slightly. Then he

grinned. He knocked the ashes out of his pipe and put it in his pocket. He picked up a few pebbles and flung them cheerfully into the sea. Then he rose and walked back to Mrs. O'Flaherty's cottage.

The churning was over. Mrs. O'Flaherty was working the butter with her hands at the table. Mary Kate still sat with the baby on her knee.

"Good-evening to you, Mrs. O'Flaherty," said Meldon.

"Is it yourself again? Faith, I thought you were gone for to-day anyway."

"I looked in again to see if Michael Pat was all right after the shaking I gave him. Would you sooner be churning the butter or churning the baby, Mrs. O'Flaherty? Or would you rather be taking them in turns the way we did this afternoon? I see you've got him aslecp there, Mary Kate. Just put him into the cradle now and he'll be all right.

"Mind, but he'll wake on you," said Mrs. O'Flaherty, "and me in the middle of squeezing the butter."

"He will not. Do you think I don't know when a baby's asleep? You wouldn't wake him now if you put him into the churn head first. Do what I bid you, Mary Kate. That's a good girl. Now the next thing you have to do is to run up to the iron house where the gentleman lives that does be measuring out the land and tell him I want to see him this evening. He's to get some one to put him off to the yacht; do you understand? I'm not coming ashore again. Will you do that for me, like a good girl?"

"I might."

"Well then, do. And look here. If he isn't there, just you sit down outside the door and wait till he comes. Now off with you. I'll follow in a minute or two. It wouldn't do for you and me to be seen walking about together every hour of the day, Mary Kate. They might say we were courting; and that wouldn't suit you any more than myself. Goodbye to you, Mrs. O'Flaherty. I'm really off this time, but very likely I'll look in to-morrow to see Michael Pat and the butter. Will you be off out of this, Mary Kate? You'll spoil the look of your mouth for life if you stand there grinning much longer."

Meldon walked to the pier, passed it, and went down to the sandy beach which lay beyond. There were three curraghs drawn up and laid, as the custom is with such boats, bottom upward on the sand. One of them Meldon recognized as that in which Higginbotham had come off to the Spindrift. It was the property of Jamesy O'Flaherty. Meldon passed it and looked at the next. The canvas bottom revealed a large rent. It could not possibly go to sea. The third was sound. Meldon knelt down and looked under it. The oars were there as he expected. He went back to the pier, embarked in the collapsible punt, and rowed out to the Spindrift.

He found that Major Kent had finished his nap and was reading, for want of other literature, the sheet of a week-old newspaper. It was spotted with grease and a good deal crumpled, having, in fact, been used to wrap up the bacon which they ate at breakfast. The occupation showed that the Major was very much bored. He gave frank expression to his feelings.

"How much longer do you intend to spend mousing round this wretched little island, J. J.? I'm about sick of it. This isn't my idea of a cruise at all. I mean to up-anchor and slip across to Inishmore for a change."

"Don't you do anything of the sort. You'll be sorry all your life afterwards if you do. I don't mind telling you that we're just on the very verge of bagging the treasure."

"I don't believe it."

"I'll give you my word, Major, that if you stay here to-morrow, I'll be ready to go anywhere you like the next day. The next twenty-four hours, or thirty-six hours at the outside, will see the thing through."

"That's all very well. But if your treasure-hunting consists in sitting here all day watching those other two fellows on the Aureole, I tell you plainly it's not good enough."

"If it's a little excitement you want, you shall have it to-morrow. I was thinking things out a bit after I finished nursing Michael Pat, and——"

"Finished what?"

"Nursing Michael Pat, the baby Sir Giles wouldn't vaccinate this morning. But you're a slow-witted man, Major. It's one of your great faults. Everything has to be explained to you. I suppose I must begin at the beginning."

"I wish you would."

"Well, I will. But first of all, I may

Before him, laid on a slab of rock at the side of the cave, were two iron chests. Their lids stood wide open. They were perfectly empty.

as well mention that I've planned a coup d'état for to-morrow. I'm not sure that I've got the expression quite right. Perhaps I ought to say a coup de théâtre; but you know what I mean, anyhow."

"I don't; hut I might make a guess if you'd hegin at the heginning instead of in the middle or at the end."

"The epic poet," said Meldon, "always hegins in the middle. It's a well-known literary law that all first-rate narrative hegins in the middle. If you don't know the middle of a thing, how on earth can you appreciate the beginning? My coup—we'll call it simply a coup, so as to get over the difficulty of not knowing exactly which sort of coup it is—comes off to-morrow, hut it hegins this evening. I don't expect you to play up to me. That would probahly he heyond you, hut I hope you'll try and not actually give the show away when Higginhotham comes."

"Oh, Higginhotham's in it, is he?"

"Of course Higginhotham's in it. So is Mary Kate, so is Sir Giles, so is Langton, so are you and I. It wouldn't he a coup of any sort if we weren't all in it."

"If it involves my adopting another disguise—— But what's the good of my talking?"

"None. Just you listen. I went on shore this afternoon to find out what Sir Giles and the other man were after. I took sixpence with me for Mary Kate. I set the dear little girl on to watch Sir Giles while I went and nursed Michael Pat—a fine, plump hahy, Michael Pat, hut hoisterous."

"Is he part of the coup?"

"No. I should like to have him in it if I could, hut I can't manage it. Well, after a time Mary Kate returned and told me that Sir Giles and the man who owns the fur coat went up to Thomas O'Flaherty Pat's field and looked at the hole there is in it."

"Is the hole part of the coup?"

"It is not. The fact is I don't quite see how the hole comes in. That's what has me so set on bringing off my coup without delay. If I understood why they looked at that hole I might see my way to checkmate their move whatever it is. But I don't. They may have a game on, or they may not. I'm not going to give them a chance."

"Perhaps," said the Major, "you'll get to the coup soon."

"I wanted to tell you about the coup first thing; hut you kept nagging at me to go back to the heginning. Now I've gone hack to the beginning and you're discontented hecause you havn't got the end straight off. You're a very hard man to please."

"All I mean," said the Major, "is that it's near tea time."

"That reminds me that Higginhotham may he here at any moment. Listen now. There seem to me to he only two availahle boats on this island, Jamesy O'Flaherty's curragh and another."

"There's a third. I saw three on the beach this morning."

"One of those has a hole in her bottom you could put your foot through; so there are only two to be considered. Now if Jamesy O'Flaherty was to go off to-morrow to Inishmore in his curragh and if I could put the other one hors de combat, so to speak——"

"Knock a hole in her, I suppose."

"Now would I do a thing like that to a curragh that helongs to a poor man, for all I know to the contrary to Mary Kate's father? I wouldn't if you paid me. All I mean to do is to temporarily conceal her oars so that she can't he rowed. Now if Jamesy's curragh is off at sea and the other one is not availahle, and if the Aureole's punt were to go adrift, I don't quite see how those two jokers could get ashore, do you?"

"So that's the coup, is it?"

"Yes. You see it requires some management. There are three distinct points. First, Jamesy O'Flaherty's curragh must be sent off. Next, the other curragh must be dealt with. Finally we must hope that the Aureole's punt will go adrift during the night."

"It won't," said the Major. "Why should it?"

"Oh, yes, it will. I mean to see to it myself that it goes adrift."

"Do you mean to set Higginbotham afloat in it?"

"No, I don't. I told you before that I had a regard for Higginbotham. I don't want to send him off without oars in an unseaworthy punt. I wouldn't do it to any man, much less to a fellow who used to come up with me every second Sunday to Rathmines when I——"

"Don't hegin again ahout your little girl."

"I wasn't going to mention my little girl. But as you've introduced the subject of little girls I must say that I think your tone about women is most discourteous. You display what I may call a graceless want of chivalry. I'm not a feminist myself or anything extreme of any kind, but I think a man ought to show some respect to women, and not be always sneering at them as you are. After all, Major, if you hadn't had a mother where would you he now? You ought to try and remember little things like that."

"Would there he anything unchivalrous," said the Major, "in asking where Higginhotham does come in if he's not to go to sea in Sir Giles's punt?"

"It's my punt, not Sir Giles's. But we needn't argue about that. The thing's quite simple. Higginhotham is to go to Inishmore in Jamesy O'Flaherty's curragh."

"Oh, is he?"

"Yes. He's to start early, ahout six a.m."

"Why?"

"Because I don't see how I'm to get Jamesy O'Flaherty off to Inishmore for the day in his curragh unless I make Higginbotham hire him for the purpose. Besides, I want Higginbotham out of the way, too. If he's on the island he'll do some sort of michief, with the hest intentions, of course, and spoil the whole coup. There's no saying what a kind-hearted man like Higginhotham would do when he found out that Sir Giles and Langton were shut up on the Aureole and couldn't get ashore. He might hunt us up and make us go off for them. No; I don't want even to inconvenience Higginbotham more than I can help; but I can't have him on this island to-morrow."

"The whole thing seems to me enormously complicated," said the Major. "I don't see how you can expect it to work without a hitch. All I insist on is that you don't bring me into it."

"It's perfectly simple," said Meldon. "I don't see where a hitch can come in if the thing's properly worked."

CHAPTER XI.

Major Kent and Meldon had finished their eggs and were eating hread-and-jam when Higginbotham, rowed hy Jamesy O'Flaherty, reached the Spindrift. At the sound of a bump against the yacht's side Meldon went on deck.

"Come along, Higginbotham," he said. "Come helow and have a cup of tea. Jamesy O'Flaherty, do you make your curragh fast and get on board. I'll bring you up a glass of whisky in a minute."

He shepherded Higginbotham into the cabin. The Major rose to his feet nervously. He foresaw that the process of persuading Higginhotham to set out for Inishmore in a curragh at six the next morning would be trying.

"I think," he said, "I'll go on deck and have a chat with Jamesy O'Flaherty."

"Do," said Meldon, "and take a glass of whisky with you. I want to have a quiet talk with Higginbotham."

The Major departed, well satisfied that he would escape taking part in the quiet talk which was to follow.

"Help yourself to some tea," said Meldon to Higginbotham, "and make yourself comfortahle with a slice of bread-and-jam. I think I mentioned to you yesterday that Sir Giles Buckley is rather a big hug in his own way."

"You said he was something in the Castle."

"He is. I hinted, I think that either Crimes Acts or Royal Commissions were his particular line. I was wrong there I confused him for the moment with another man whose name is somewhat similar. The fact is that Sir Giles is the man whom they keep unattached, as it were, to take up any particular job that happens to be prominent at the moment. It may be a famine, or it may be crochet, or sick nurses, or Christmas-trees for workhouse children. Whatever it is, Sir Giles is the man who runs it. At present it happens to be tuherculosis."

"I never heard of there being any such man in the Castle."

"I dare say not. You official people get into very narrow grooves. You all of you seem to think that your own footy little Board is the only one in the country. Whereas there are lots and lots of others hesides the one you happen to he connected with. Not that I mean to suggest that Sir Giles is a Board. He

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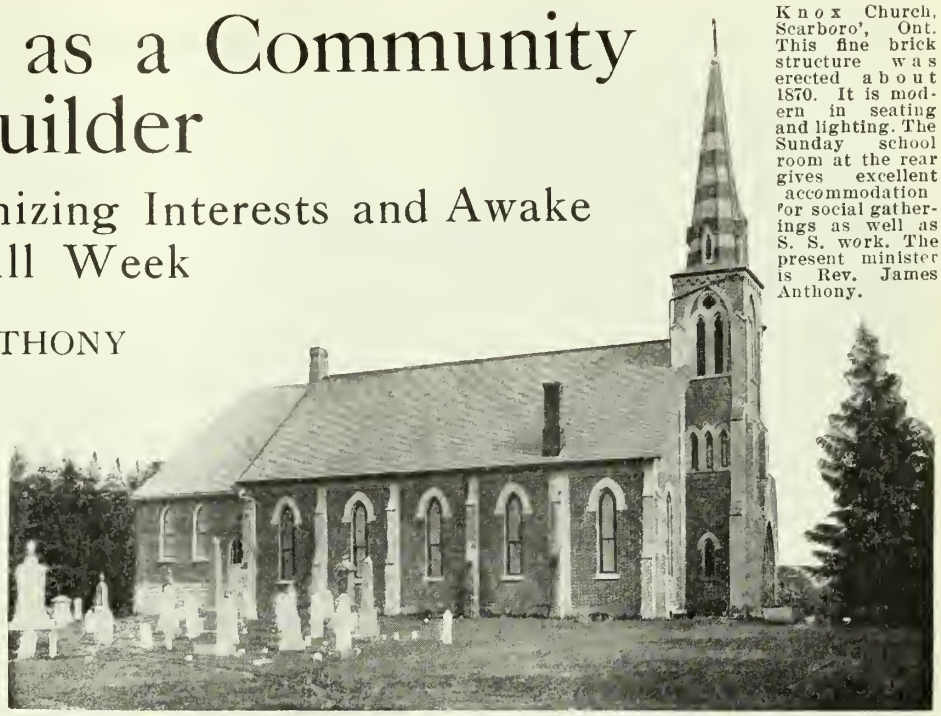
The Church as a Community Builder

A Centre of Humanizing Interests and Awake All Week

By JAMES ANTHONY



Knox Church, Scarboro', Ont. This fine brick structure was erected about 1870. It is modern in seating and lighting. The Sunday school room at the rear gives excellent accommodation for social gatherings as well as S. S. work. The present minister is Rev. James Anthony.

The country church has before her one of the greatest social problems of the times. How to best meet this, and to overcome the handicaps arising from rural depopulation and other common causes are treated in a practical and direct manner in this article. Mr. Anthony is pastor of Knox, Scarboro, a church well-known for the enthusiastic interest of its young people and for its fine community life, and the ideas expressed here have been well proved in his own experience.

I WAS amused the other day when quizzing one of the rural schools of older Ontario to find that few of the boys or girls were able to tell me why their fathers and mothers were so busy plowing and sowing and feeding. I had no difficulty in finding out what was done with the wheat and oats. These were all devoted to feeding horses or fowl, so the children told me. When I inquired what was done with the hogs when they were fattened I was told that the hogs were sold for money and that the money was put into the bank. One wise little fellow told me that the money was used "to buy things." Inquiry elicited the fact that the things bought were clothes, tea, sugar, harness and farm implements. Not until it was suggested to them did it occur to the children that the money got at the expense of hard work might well be spent in books, pictures, in getting an education, or in building and keeping up schools and churches.

Again, I was driving home one night when I invited into my buggy one of the hired men of the neighborhood. He was young, athletic, eager. "Well, how are you liking it here?" I inquired. "Oh," came the reply, "I'm going to get out of here. There's nothing for a fellow but eat, sleep and work."

Do these two incidents not go a long way towards making clear the fact that many of our country churches are not doing the work that they should be doing for the community in which they are situated? Those children should have had their minds upon other things than the bank and upon buying such things as they enumerated. At least they should have known that there are other things to be thought of besides the things they mentioned so readily. That young man should have been able to report that there was something humanizing in the community besides the life that was so suggestive of the routine of the horses that he groomed and cared for in order that they might be at their maximum of working efficiency.

It is just here that the church finds her opportunity. It is her business to direct and to create humanizing interests. She has done this all along. But as the country develops and interests multiply it is her business to see that the best in men is being called out continually. The best parts in old Ontario to-day, the places where one can best rear his children in decency, where women are at their best and where the commercial side of the farm work is most encouraging, are the districts where the circuit rider and the missionary were most cordially received and their teachings most heeded. The fact remains, however, that many of these very districts have not been careful to have the church efficiency keep pace with the development of recent years. Formerly the church was the sole social centre. Lately, however, the old feeling of isolation has been dissipated. The railway has brought the city to the farmer's very door. The standard of public entertainment has been set by the entertainer from the training school of the city. Instead of skating on the pond in the winter, we now have the rink and its hockey matches in which the pace is set by the professional players. Instead of the frolic after the logging or wood bee, we now have the assembly in the public hall for which the music is furnished by the city orchestra. Co-operative buying and selling are rapidly displacing the old individualistic methods of doing business. Aggressive leaders in the city churches have formulated schemes for the work of the whole church and so persistently are these claims urged upon the membership of the country church that the rural church has scarcely time to give to the consideration of its own peculiar opportunities and problems.

In thus standing by while the more aggressive forces in the country have been attaining their ends the rural church has made a fundamental mistake. She neglected her duty by remaining in relative idleness while the workers in other fields of human interest have been making good. She should have pre-empted the ground and have played the part of leader. Had she been as true as she should have been to the claims laid upon her as the guide of her constituency she would now be the dictator of the terms that men would gladly accept as their rule of faith and manners. She should have been the first to see what her followers required economically and socially as well as religiously. Too often she has allowed herself to take a censorious attitude towards the wholesome fun and recreation of her neighborhood, and has been altogether too slow to detect the economic signs of the times. Her leaders have almost unconsciously come to regard the prosperity of the community as something to be exploited rather than a factor to be enhanced and spiritualized by having it directed in view of the whole interests of the men and women who have brought it about. Her leaders have noted the recent commercial success only to inveigh against its possible evils, and sport has been studied only to submit it to indiscriminate condemnation. The result has been estrangement between the church and many of the brightest minds of the community, much to the loss of all concerned.

There are, no doubt, other causes that have contributed to the country church's loss of prestige. Some of her best workers have heeded the call of the West. Still others have yielded to the lure of the city. The scarcity of reliable farm labor has prevented many from attending her services. The fact that the farmer has not had a square deal economically has made the adequate maintenance of the church almost impossible.

But while all these reasons for the country church's relative impotency must be considered in forming any scheme for the betterment of rural social conditions,

the fact remains that the rural church must look to her own efforts in the matter of her attaining the position she may and should occupy in serving her constituency. She must do a lot of hard thinking and be prepared to learn that she must serve or make way for some organization that has heeded the injunction "What God has cleansed call not thou common or unclean." The remedy must go as deep as human nature, and be as thorough-going as the primal wants of man. No cure-all need be sought for. Each church must get out onto her own right of way and stay there till she has found the way of reconstructing and revitalizing, all that is essential to the well-being of her community. What meets the needs of one congregation may not be the thing required by another. The one essential is that the church find the way of placing the men and women and the boys under her own church-spire in the way of attaining their maximum of welfare in every way.

The country church must lead in all matters of rural progress or be prepared to quit the field of action. Only by so doing will she bring her flock into fellowship with her King and Head. Almost His last message to her was, "I am the living one." Christ is not dead nor is He to be found among the dead, but among the living. There is no such a thing as going back to Christ. He is the leader of His people. He made it His aim when He sojourned in Judea and Galilee to administer to human interests and necessities. He is still the Son of Man and they who would find Him must seek Him where human interests are keenest and human necessities are the strongest. No church will rise to her opportunities till she becomes the prophet that directs the young and becomes the counsellor of the men and women who are seeking to get things done.

This she may do in a score of ways. By social gatherings held either in private houses or in the church itself she may help to direct the social life of young and old. By reading circles she may help to acquaint her members with the best thoughts of the best men and women who have ever lived. By debating and literary exercises she may train her people in the art of public discussion and debate. By inviting lecturers she may keep informed as to the methods and work of the leaders and moulders of thought and action in the present day. By the study of missionary topics and books she may keep her people abreast of the work that is being done in foreign lands. Indeed, her field of opportunity should be and may be made as wide as human interest itself. *The day has gone by when a church may hope to overtake her duty by being on her job but one day in the week.*

Still further in the past is the day when the church can be identified with a building called a sacred place. The church consists of, not buildings, but men and women who have caught the spirit of the One who was in the midst of men as one who serveth. No longer can she appeal to a sanctity that is bolstered up by tradition or be maintained by a dignity that rests upon millinery and pious phraseology and holy tones. Her creed cannot longer consist of truths that have long since lost their power to mould the thought of red-blooded modern life or direct its interests. Like her sweet singer, she must serve her own generation. Nothing that is of human interest can be alien to her. She must recognize that sacredness is not found in buildings but in lives, and see to it that her religion manifests itself in a service that inspires, purifies and elevates every activity and every interest of all upon whom her light should shine.

He Preaches to the Coming Leaders

If any man who has been called to serve the Lord in a country pastorate is inclined to underestimate the work which he is trying to do, it may be well for him to carefully consider the statement of Dr. Frank W. Gunsaulus, of Chicago, who, speaking at the Minnesota state farm school, declared that he himself was a farmer's boy, and he said also tht every one of Chicago's twelve greatest preachers came from the farm, while 86 *out of its* 100 *leading physicians,* 81 *of its* 100 *leading lawyers, and* 63 *of its* 100 *best engineers, all hailed from the farm. The rural preacher is preaching to the intellectual aristocracy of the future.*

St. Andrews, the mother church of Scarboro, was founded in 1797. This building was erected in 1850. The present minister is Rev. H. Carmichael, M.A.

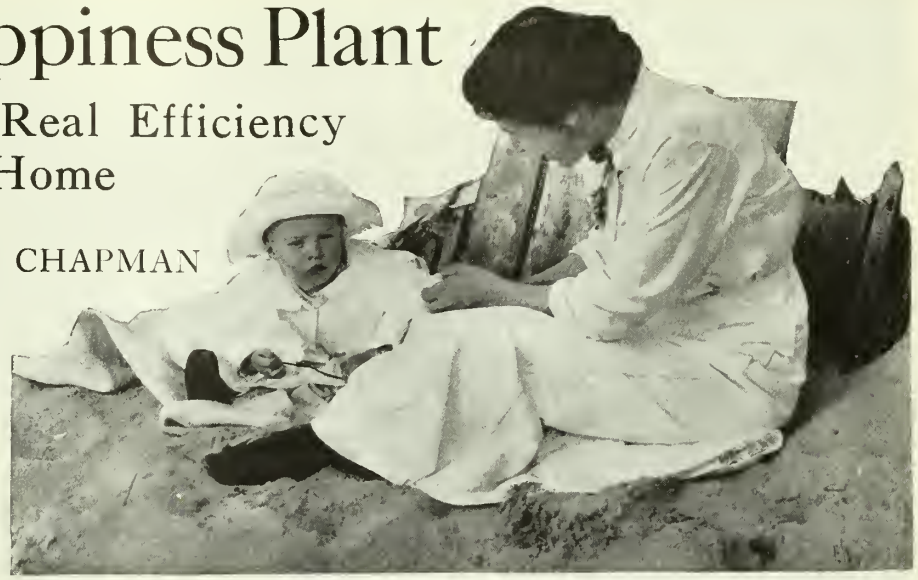
THE MEN OF THE PRAIRIES

Whatever it is, there is something in the air of the Western provinces that invigorates human nature. The joy of living is a real thing to them. This feature was evident in the first immigration agent west of Lake Superior, so Librarian John Blue, of Alberta, claims. In the archives of Edmonton, he finds there, words written by a Frenchman named Radisson in 1636, which shows that the breezy optimism of today, is an inherited quantity. This report, in speaking of the West, says: "The country was so beautiful, pleasant and fruitful that it grieved me to see that the world could not discover such enticing countries to live in. This I say because the Europeans fight for a rock in the seas against one another—for a sterile land where, by changement of air, they engender sickness and die. Contrariwise, these kingdoms (the prairies) are so delicious and under so temperate a climate, so full of all things, that the people live long and lusty, and wise in their ways. What a conquest this would be! What pleasure people would have instead of misery and poverty!"

Running a Happiness Plant

What Constitutes Real Efficiency in the Home

By ETHEL M. CHAPMAN



A boy will remember that his mother had time to listen to his stories or help him through a hard place in reducing a fraction or making a kite.

WHAT we hear about "efficiency in the home" is sometimes a bit confusing. It always goes before machinery and science and method and stops there as though the home were a factory plant. A home is a factory, but it is a factory for the production of happiness which is such a rare and perishable thing as to require something more elastic than a uniform, cast iron management of business system and science laws. Even an ideal equipment of power machinery won't turn out the desired product—but it will help.

The point where many of the best housekeepers fail in running a happiness factory is that their sense of proportion is not well balanced. They do not take stock of their strength and time, set them over against what they consider "must-be-dones," and decide what they can sift out in order to leave a balance of personal resources to contribute to the happiness of the household. I believe there are women who would wash on Monday if there was going to be a wedding in the house in the afternoon. They lay out the week's work after they go to bed on Sunday night, and if anything comes up to interfere with the plan the nap of their tempers is so feverishly rubbed the wrong way that the whole family catches the sparks. If a suggestion comes from the foot of the table some morning that they drive over to mother's for dinner she cannot think of going because she has planned to clean the parlor windows. It is true that there is discomfort in disorder, and that germs breed in dust, but it goes without saying that we expect some liberty from rules in our own house, and that more ill-health comes from overstrained muscles and nerves than from the fluff collecting on picture wires.

The ambition for "efficient" housekeeping is not sufficient cause for a woman to sacrifice the physical health and peace of mind she needs to give tone to her household. It was not a strenuous attention to cobwebs and mud tracks that set up her husband's ideal of womanhood in the old days, and it will not add to his happiness now. A boy may forget that once in a while he went to school with a torn shirt that his mother hadn't time to mend, but he will remember that she always had time to listen to his stories of trouble and joy and ambition or to help him through a hard place in reducing a fraction or making a kite. It will not matter to a girl whether she wore hand-embroidered dresses or gingham frocks, but the happiness of her whole life may be determined by the sympathetic interest her mother takes in her affairs while she is under the home roof. It is no mechanical job this running a happiness factory.

The women who are every day giving the best of their thought and skill to taking care of their homes and families and being good neighbors, must sometimes wonder at the superficial discourses they hear and read on "Efficiency in the Home." They appreciate the value of any helpful knowledge, however new it may be, and have a well proportioned respect for system, but the "efficiency fanatic" who argues that unscheduled housework is drudgery and every unnecessary outlay an extravagance takes the spirit right out of home-making and misses the whole object of its mission—the production of happiness.

And perhaps in no other department is the importance of rule and method emphasized so generally as in the feeding of the household—a principle so sound as to have become fairly popular. Anyone can see the wisdom of planning balanced rations, but the scientist usually figures the required nutriment down to a minimum and makes the "cost of living" such an important factor in the calculation, that the prescribed bill-of-fare is just sufficient to keep people living and working—nothing more. There is little in the diet to stimulate the intellectual or imaginative forces, fortify endurance or resist disease, because it consists largely of starch, and starch will give more stiffness to your shirt bosom than to your backbone. Because more calories of nourishment can be got in the form of cornmeal for five cents than for almost double that amount in any other food is no valid reason for feeding a family on cornmeal unless starvation is actually howling at the door. Balanced rations are worth studying not for the sake of cutting down expenses, but in order to feed people well. Children should have a surplus of proteid in order to grow and play and be riotously happy. Grown-ups need it in order to do the most, and get the most out of life It is poor economy to own an engine capable of developing sixty horse-power and run it at only forty to save fuel.

There are other cases where the economy of luxury may be proved. Suppose your home lacks certain comforts and conveniences that you would like to have. The firm could afford them now, but you can get along without them for a while yet, and you have been used to getting along without things. Perhaps you have rather prided yourself in it. It is surely an admirable trait unless you have lost sight of the object of your business, to manufacture happiness. The money that these things cost would look well out on a mortgage, but if the happiness of the family would be noticeably increased by having a new piano, or good-looking comfortable furniture, or a water system in the house, can you afford to do without them for another year?

We also hear a great deal about efficiency in the performance of housework. The plan has even been tried of taking moving pictures of individuals, skilled and otherwise, at work, in order to study and eliminate all useless and unnecessary movements, in doing certain jobs like washing dishes, making bread or setting a hen. The discovery made in this way might save hundreds of dollars a year in a sawmill or shirt-factory, but where the product to be turned out is human happiness instead of shirts or lumber, it is vastly more important that the worker have a sympathetic, optimistic attitude toward her work than that she become a drab-visioned, capable machine. The homemaker is a real artist who can by the thought of her mind and the skill of her hands get a snow-white washing of clothes on the line or turn out a baking of wholesome loaves, and feel about it like a painter when he first stands off to look at his finished masterpiece. She is contented and happy and the condition is so contagious that her whole house reflects the glow.

Then if happiness is contagious, it is worth cultivating, and it can be cultivated. The trouble is that so many people don't feel right in being happy. They have had troubles which they have sort of promised their friends they will

In many communities there are young people who haven't much color in their lives.

not get over and they would have it understood that when they smile they are only hiding the ache beneath. You don't get over certain troubles, and the ache is there: everyone knows that because they have it themselves in one form or another. Or it may seem undignified and common to be positively happy, but Mrs. Wilcox has expressed a truth in the lines:

The commonest thing in the world is unrest,
If you want to be really unique go along,
And act as if fate had not done you a wrong
And declare you have had your desserts in this life.

The woman who ran keep her sense of humor, and her love of play and laughter young is a blessing to any home or community.

The community has a right to be considered a little if only as it is affected by the hospitality of our factory of happiness. This is where many good homemakes make a mistake because they want to give too much. They know what is supposed to constitute "nice" entertaining, and if company drops in when the curtains are down and there is no cake in the house, they can't enjoy the visit at all. A woman who has the good sense and independence and kindness of heart to treat her company like members of the family and makes them feel at home in her house when they arrive at untimely season is a genius. This is hospitality as it should be, but the social reciprocity spirit is fast creeping into our country life, breaking up communities into cliques and playing havoc with neighborliness generally. Moreover, the home that is a factory of happiness should shed its light farther than its own picket fence. It is a kind of Mecca for strangers, and outcasts and young people, who haven't much color in their lives, because the woman who creates its atmosphere always has the spirit of universal motherhood.

The Crows' Royal Commission

The Farmer Finds a Real Friend in Black Disguise

By NEIL ARMSTRONG

ONE twenty-fourth of May, when the glorious Queen's weather was on, a royal commission of crows met in the gully woods bordering the farms on the Elmdrift.

There were three on this commission, representing three tribal flocks, the Cedarperchers, occupying the air-itory of evergreen groves stretching for miles up the flats; the Caw-scavengers, who inhabited a barrons beyond the village, and the Pinestruts, parading daily on the brown ploughed squares of the Elmdrift section.

They were discussing settlers' prospects for the summer, and making out a crop bulletin.

The Cedarpercher was the first to mount the spacious table of a stump, and the others prepared to take notes with their black beady eyes.

"We carry too heavy a population up the flats," he began in solemn anxiety, "After all the spring's loot of birds' eggs, we've had to work up the sod of a whole side-hill for grubs, and famine is still staring us in the face. I do not consider this pasture-land creek-country advantageous for a large settlement of crows. Our usual emigration agents can't begin to touch their work."

The Caw-scavenger next took the floor. "Two months ago," he regretted, "I could have invited a bunch up our way. We had a dead horse up the ravine then, and—and other things. But now that we've eaten up the carrion, and saved the farmers from malaria, I am sorry to say they have turned mean on us. They're planting corn all along the concession, of course, but the malignant brutes bring their guns out to work, and we daren't show our heads, even to pick insects. Nineteen of our most daring youths are already strung up for scarecrows. What grain is left on the fields for us to pick overnight makes us deathly sick—dosed with that terrible green mixture, I expect. Our tribe has fallen on hard times this season, and I am obliged to say there is no chance for settlers down our way at present."

The Pinestrut took the floor slowly, and considered well before he spoke—"I don't care to encourage too much," he began diplomatically, "You can bring or an overdose of population anywhere, notwithstanding all this twaddle about race suicide. But there's a man here with two hundred acres of Elmdrift upland, and the whole back of the double lot in corn. A scientific farmer they call him, which, as near as I can figure it, means doing everything the other way about. I call him a Christian. We've picked larvae all month behind his machines, and now these three days he's been planting, he's returning the favor—brought shelled corn back and scattered it all along the gully edge of his fields. There isn't a poisoned kernel in the lot either. Why, we're forgetting how to dig even. I don't promise anything; but we are brothers in a socialistic race, and I am empowered to say the Pinestruts are willing to share their fortune while it lasts."

So the surplus Caw-scavengers and Cedarperchers came down to the Elmdrift. And, in August, a vast army of grasshoppers swept over the country and devastated the lands up the flats and back of the village. But thanks to the reinforced Pinestruts, not a blade of the scientist's crop was touched.

A few hours of this makes a delightful holiday exercise.

Making Alfalfa Hay

Saving the Best Hay that the Farm has Ever Known

By HY. GLENDENNING

In the April issue of Farmer's Magazine there appeared an article, "The Friendliness of Alfalfa." As a sequel to this we have here, by the same writer, a discussion of the principles of curing the hay—a subject of keen interest to every alfalfa grower. Mr. Glendenning is one of the pioneer advocates of alfalfa as a food for stock and soil, and years of experience in growing it on his own farm give weight to his ideas.

ALFALFA made into hay and feed in the stable is the most profitable way of handling this valuable forage crop.

The proper time to cut for hay is when the buds start to show at the base of the plant. This is usually when it commences to bloom or when about one-tenth of the blossoms are out. There is considerable sap in the alfalfa plant at the time of cutting and in the process of hay-making there should be good judgment exercised. There is no one way of making hay. If the weather is fine and dry the process is greatly simplified. The mower should be started to cut in the morning after the most of the dew has dried off, and followed by the tedder within an hour. This keeps the leaves that are exposed to the sun from becoming too dry. The leaves should be kept in a wilted condition until the stalks are pretty well dried. Many of the leaves near the base of the stalks which are matured or have become weakened where the crop is thick will fall off when cut. By the frequent use of the tedder we can keep the leaves in a wilted state and allow them to perform the function that nature intended them to perform, by drawing the sap out of the stalks and passing it off into the atmosphere by transpiration. The constant use of the tedder allows the air to pass freely through the new-cut alfalfa and dry it quickly. By this method we can have the greatest amount of leaves which constitute from 50 to 75 per cent. of the food value of the plant. I ted my alfalfa twice the day it is cut. It is raked into windrows the same evening and allowed to lie in the windrows overnight. These windrows are tedded lengthwise the following morning after the dew has dried off. They are tedded again in the afternoon, let lay in the windrows the second night, and tedded again the third morning.

The hay loader can be used immediately after tedding and the hay stored in the barn. By this plan a fine quality of hay of a beautiful green color with practically all of the leaves upon it can be secured. This hay is saved at a minimum of cost of labor as the work has been nearly all done by the horses and machinery. The hay will come out of the mow in the winter time without any mold or mustiness and as green as when put in the barn.

If weather conditions are not favorable for the aforementioned plans, I ted twice the day it is cut and put into small coils that evening. The coils are allowed to stand in condition to store. The coils should have their butts turned up to the sun and wind for a few hours before hauling to the barn. A good quality of hay can be made in this way, but the outside of the coils will be discolored and the outside leaves will readily fall off. This plan entails a deal of hand labor and adds greatly to the cost of making hay.

If the weather is wet and the coils have to stand for a length of time, they should be moved to a fresh place to prevent the killing out of the plants under the coils. This can be done by two men putting their forks into the coils on one side and pulling them on to fresh ground.

It is better to use slings than a hay fork for putting it into the barn, as there is not so great a loss of the leaves. It is not advisable to let the bundles drop from a great length in the barn on one place in the mow, but have them drop all over the mow; the hay will save much better by doing so.

Alfalfa produces two or three good crops of hay in the year according to the season. Aim to have a good growth standing on the fields in the fall to go in to the winter with, as a protection. An alfalfa field is generally at its best about the third year. Blue grass is one of the natural enemies of alfalfa. It is apt to crowd out the plants. Sometimes alfalfa fields are allowed to stand without breaking for over twenty years, but it is usually more profitable to plow up a field after it has been down from three to five years.

Many are deterred from growing alfalfa from the terrible stories told of the difficulty of breaking up an old alfalfa sod. It is a fact that alfalfa has many large, long, tough roots. When it is decided to break an alfalfa sod, we should call to our aid the forces of nature. We have stated in a former article that close pasturing destroys the plants. Let us make use of that knowledge.

Having decided to break up a field, turn the stock upon it in the fall and pasture close. All kinds of stock are very fond of alfalfa, horses will pick it closer than any other animal, and if they are allowed to pasture late in the fall and run over the fields in the winter or early spring when frozen they will bite out the crowns of the plants. Every crown nipped out means a dead plant. If the plowing is delayed until the middle of May it will be found that nearly all of the al-

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Higher Grain Prices

A Reader Replies to the $2.00 a Bushel Wheat Argument in the Feeding of Grain

By ANDREW McTAGGART

A contributor in the April issue sought information on the returns from feeding grain to animals. It is contended by many that a much bigger price can be received by feeding corn, wheat, barley, oats, etc. This article is an answer to the request, and while he is not definite enough, he makes a good start. Any reader who has any information on feeding returns will be welcomed here. Address the Editor, at 143 University Ave., Toronto.

MANY farmers have found that it is a paying proposition to feed all the grain and fodder that the farm produces. Here is the experience of one farmer who kept tab on the performance of his herd of five cows. His ration consisted of mixed hay, bran, wheat and oat chop, oilcake and turnips, together with a little oat straw. From these his weekly output of butter alone was fifty-five pounds. His butter alone yielded him a profit of ten per cent. Besides he had one hundred and ninety gallons of skim milk and a considerable amount of buttermilk, to say nothing of a large and not to be neglected amount of high-grade manure. The skim milk goes to the feeding of calves, of hogs and for fattening poultry, every ounce of it manufactured, with the result that the butter-making is but the beginning of the profit that this farmer makes from his manufacture of his grain on his premises. It will be noted that this is a herd of grade cows that has not been assembled by any special process of selection. No cow in the herd gives more than thirty pounds of milk at a milking. It would be interesting to learn the results that would accrue to this farmer had he a herd of cows producing an average of fifty pounds to the milking. Such an average is not out of the range of practical farming.

In the matter of feeding bullocks it is quite well understood that there is a profit in feeding cattle on the farm from grain grown on the farm. In a matter of this kind figures may be misleading. A careful review of the experience of men who have fed cattle for a long period of years goes to prove that the grain that will feed a thousand-pound bullock for one month would if sold on the market bring the farmer about five or six dollars.

This same quantity of grain if sold in the form of manufactured beef will yield the farmer returns of from six to nine dollars. The same ratio of profit holds in the matter of roots and other fodder. Further, the feeding of the cattle the grain is no more expensive, as actual experience has proven, than the marketing of it. To this profit there must be added the manure. Of the value of this latter product no one can speak too appreciatively. The stock feeder's farm utterly outclasses the non-feeder's farm in the matter of productiveness. Not only does he grow more bushels per acre but the grain is of a better quality and allows the feeder to sell his grain at the highest market price and to buy in its place grain that does not market at so high a figure but which is quite as good for feeding purposes. Here is another considerable profit that results from feeding stock on the farm.

Further, it will be noted that the results mentioned are those that ensue upon feeding such bullocks as may be bought on the stock market in the autumn. One of these stock market bullocks, weighing one thousand pounds when purchased, will make a gain of at least three hundred pounds for the six months' feeding. Even at that average he yields his feeder a fair return. Take the experience, on the other hand, of the farmer in Scarboro who fed two bullocks that he himself raised. These were from a pure bred Shorthorn sire and from high-grade Durham dams. These bullocks, after a drive of a quarter of a mile, showed that in four months they had made a gain of six hundred pounds. In other words, where the lower grades made a gain of three hundred pounds in six months, the high-grades made a gain of the same amount in four months.

The profit from live stock often comes from the uncleared land.

Hogs are Profitable

At the present time there is little doubt that there is money in feeding hogs for the market. While it is difficult to get figures those who feed both hogs and cattle find that the advantage is in favor of the hogs. While the meal that is fed to a bullock would if sold in the market bring five or six dollars for the month's feeding but which if manufactured into beef would bring about seven or nine dollars, the same proportion of meal if fed to hogs would bring from nine to eleven dollars. At present the advantage rests with the man who breeds his own hogs. The same rule applies here, in this respect, as obtains in the case of fattening cattle. Some excel as hog breeders; others do best as fatteners. These two classes may cooperate advantageously. The live stock raised on the premises, whether cattle or horses or hogs or poultry, can be watched throughout its growth and each day of its existence made preparatory to the finished stage. In many cases it is not convenient for this to be done and the non-breeder is obliged to make the best he can of the situation.

The poultry industry is as yet in its infancy in this country. While it is not well for any farmer to make poultry his sole business he will find it profitable to give this part of his industry considerable attention. At least one hundred hens may be kept on every hundred acres. If attention is paid to them the hens will give the farmer in egg return alone at least two dollars per bushel for wheat fed to them.

Big Bushel Values from Holsteins

Mr. W. A. Paterson, of Agincourt, Ontario, has had during the present winter the following results from feeding a herd of twelve Holstein cows. These cows were fed during the two months for which we have the figures the following daily ration:—

12 lbs. of meal	costing	13 cents	per day.
10 lbs. of hay	"	7½ "	"
40 lbs. ensilage	"	5 "	"
20 lbs. of roots	"	3 "	"

This meant a total cost for the period of the experiment of $229.40. The returns were 303 cans of milk amounting to $424.00. This meant a profit of $194.40.

It will be noted that in both these experiments nothing is said of the manure that the farmer has for his trouble. Mr. Simpson Rennie used to continually remind his fellow agriculturalists that they could scarcely estimate the worth of this manure to their farms. He saw no means in sight that quite equaled farm manure from well nourished animals for maintaining soil fertility. Experiments conducted by careful men for centuries bear out his opinion. Well nourished and well tilled fields are the foundation of farm prosperity. The farmer who knows his business aims year by year to increase his margin of profit and while doing this to increase the productivity of his acres. This he does by manufacturing up to the last stage every product of his farm. Every ounce of grain sold means soil depletion as the following figures from Prof. Holden well illustrate. It will be well to note that his figures are well within the mark. He points out that the sale of a ton of wheat means the loss of $11.62 in fertility, the sale of a ton of alfalfa hay the loss in fertility of $8.63, the sale of a ton of oats the loss of $7.81, a ton of corn the loss of $6.47.

On the other hand the farmer in selling a ton of finished beef loses but $5.37 in fertility. In a ton of live hogs he loses but $3.70 in fertility, and in a ton of milk but $1.48 in fertility. In a ton of cheese he loses but sixty-nine cents in fertility and in a ton of butter but 27 cents in fertility.

The Indian Runner's Egg Rivalry

A Breed of Ducks for any Farm that are Veritable Egg Machines Rivalling the Leghorns

By HARRIS K. ADAMS

This active, hardy breed is every year becoming more popular with the poultry man. As an egg producer or roaster the Indian Runner is unrivaled and possesses a most admirable faculty for taking care of itself. This article from the pen of a poultry fancier is as entertaining as it is instructive, and will be of interest to every reader who cares anything about birds.

LAYING as many eggs as a good hen, and larger eggs, too, the Indian Runner duck is rapidly achieving popularity. There is a steady demand for duck eggs, both for cooking and for table use. English-bred people are particularly fond of them. The Indian Runner is easy to raise and to care for, is seldom troubled with vermin, is very hardy and well adapted to Canadian conditions, and costs no more to feed than a hen of the larger breeds like Orpingtons.

There are three varieties, the fawn and white, the English pencilled and the pure white, the last-named the least common. The breeders of each variety make strong claims for their favorites, but probably there is not much choice. There is this for the beginner to remember, however. Some strains lay many green eggs and are to be avoided. Only guaranteed white-egg stock should be purchased, unless, indeed, one has a preference for green eggs, as some people have.

All three varieties of the Indian Runner have the same characteristics, aside from color. They are confined by low fences and do not require water in which to swim. This is an important point. Many people think one must have a pond or stream for ducks to swim in. That is not a fact. Thousands of Indian Runners pass their whole lives out of the water.

If well bred, these birds are very handsome. They are stylish in carriage, standing very erect when startled, and possess mannerisms which make them a joy to watch. They are exceedingly clannish. Occasionally one gets separated from the others, and when restored to the flock, there is evident rejoicing among all the birds, for they chatter volubly and go through a performance which suggests an Indian war dance. A fresh pan of water is usually a signal for this dance to begin, also. Up and down their heads bob, while they move slowly about, close together, all the time chattering in a low tone. One may observe these gyrations day after day for weeks and still find himself laughing at them.

Indian runners of the pure white variety. The one at the right carries itself best.

Start with a Hatching Now

To begin keeping Indian Runners in the spring, it is just as well to buy hatching eggs as breeding stock, and cheaper. If one does not care to bother with sitting hens, he can buy day-old ducklings, provided they can be obtained from a man who will guarantee white eggs and who can be trusted. The ducklings are easily shipped for short distances and a broody old hen can usually be induced to mother them if they are given to her at night, although some hens will refuse even to consider the matter. As a matter of precaution it is well to have several biddies on hand.

When the eggs are set, ten are enough for a hen of average size and 28 days are required for hatching them. A day or two before they are due to hatch, the eggs may be sprinkled with water at a temperature of 103. Also, it is well to test the eggs by the tenth day with an ordinary egg tester, for bad duck eggs are likely to be very bad indeed. If a number of hens are set at the same time and many eggs are removed, several hens may be doubled up to reduce the number of sitters.

Young ducklings are the liveliest creatures imaginable, except perhaps little guineas and pheasants. By the time they are dry, they are ready to see the world. Opening a box of day-old ducklings is an exciting event, for the little birds will proceed to climb over anything they can see over.

The first thing they require is water, and water they must have in abundance as long as they live. At first, though, it must be in a fountain or dish so arranged that they can insert their whole beaks, not climb. While covered with down, ducklings must not be allowed to get wet. If a shower comes up they must be hustled under cover. And they grow their feathers with exasperating slowness.

When young, the ducklings are afraid of nothing, but as they grow older

become more and more timid. A flock of mature ducks when frightened will pile up in a corner, one atop another, with results disastrous to the ducks at the bottom of the heap.

Treatment of the Youngsters

The youngsters may be confined in a little yard of boards just high enough so that they cannot see over it. After the first few days it is not necessary to confine the hen. She will jump into and out of the yard as she pleases but will return frequently to brood the youngsters. The ducklings have no respect for her, anyway, and the disgust which she seems to feel is not to be wondered at. Finding a fine, fat worm or other choice tidbit, she will call excitedly to her charges, but all in vain. They ignore her utterly. Only when they are cold and at night do they seek the warmth of her feathers. To them she is simply a sort of animated stove, so she soon becomes disheartened and casts them off, but by that time they are quite able to take care of themselves if given a good shelter at night and hay or straw to sleep on.

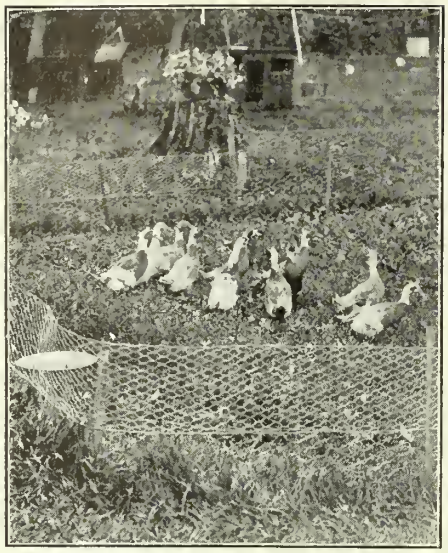
The first day, ducklings require nothing to eat, are better off without food, in fact, but must not be allowed to get chilled. Bread soaked in sweet milk and squeezed dry is a good ration for the next day or two and four feedings are needed. A little sharp sand may be sifted on the bread.

The regular ration for young ducks is a crumbly mixture of three parts wheat bran, two parts shorts, one part cornmeal and a little sand, and this may be fed from the beginning if desired. After the first week, three feedings a day will be enough and one-half part of beef scraps should be added. This is the feeding method of one of the largest breeders, but there is nothing arbitrary about it. I have found rolled oats excellent for one or more feedings each day. The ducklings will eat them dry with avidity. Of course they are more expensive than the grain mixture, but with a small flock you can give enough in the morning to last until night, after the ducks are well started on life's short journey, and so go away for the day when necessary. That is a point worth the amateur's notice.

Like a "Nightcap"

There must be water aplenty, though. It is torture for ducks to be deprived of water for long. Often they may be seen at night taking a drink—perhaps a "nightcap," after the fashion of human kind. Always the water must be deep enough so that the bills may be entirely covered, for the ducks find it necessary to constantly wash out the nostrils in order to avoid being smothered by the soft food and mud which collects in them.

A common refrigerator pan makes an excellent receptacle for water, being large enough so that the birds can bathe in it comfortably. A pan of fresh, cool water given a flock of young ducks on a hot August day will provide the owner almost as much recreation and amuse-



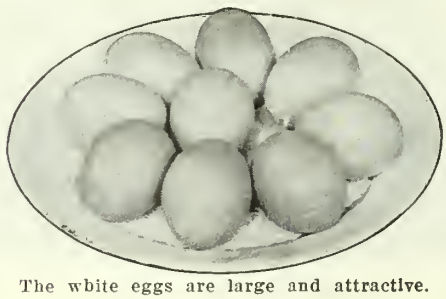
They need considerable room and can be confined in yards with movable netting in a spot among trees.

ment as a matinee ticket. When water must be given indoors it is well to make a little fence of lathes around the dish, so that the birds can get their heads through in order to drink, but cannot throw the water out with their beaks. Otherwise, they will soon have the floor dirty and wet.

There is one decided advantage in keeping ducks rather than hens—a two-foot fence of poultry wire will confine them. With such a fence, no gates are needed, it being necessary only for the attendant to step a little high when he goes from pen to pen. The fence must be perfectly upright and stretched taut, though, for Indian Runners can walk up a wire inclined at a surprisingly sharp angle. Likewise, if there is an opening anywhere one of them is likely to find it and crawl through. Ducks are not credited with much intelligence, but they are imitative and not unobserving. A small flock in my yards was temporarily confined to one section by a barricade of pine boughs. Some hens invaded that corner of the grounds and began flying back and forth over this barrier. The Runners stood very straight and quiet for some time, perhaps an hour, watching the intruders. Then one of the ducks deliberately walked up to the fence and flew over.

Too Noisy for Towns

Indian Runner ducks are too noisy to be kept in communities where the houses are close together. Yet it should not be understood that they are perpetually testing their lungs, for if fed regularly and generously and not excited they are not often heard from. If neglected, though, they will disturb the peace of a whole neighborhood. They dislike being closely confined and are happy if they have access to a piece of grass land. In summer it is essential that they have shade, for they pant distressingly when exposed to the rays of a hot sun.



The white eggs are large and attractive.

Another reason why they need considerable room is the fact that they foul a small yard in a very few weeks and must be moved, if they are not to become a nuisance. While being very fond of these birds, it is only fair to tell the whole truth about them. Although they keep themselves immaculate, they make both their yards and the floor of their houses filthy if confined to a very small space.

Such houses as are needed for Indian Runners may be made with but little work and at slight cost. Low, single-boarded coops are sufficient and the front or south side need be covered only with poultry wire, with a muslin or canvas curtain to drop on stormy nights. No interior fixtures of any kind are required. The birds sleep on the floor and drop their eggs wherever they happen to be. In summer they will spend most of the nights out of doors and on moonlight evenings may be seen silently moving about like so many ghosts. Apparently they are able to see at night much more readily than hens. In winter the floor of the house should be covered with a litter of shavings, sawdust or straw, a few handfuls being thrown in each day. Water birds though they are, it is most important that the Indian Runners have perfectly dry quarters at night.

It is an interesting peculiarity of these ducks that they usually lay their eggs before nine o'clock in the morning, for which reason it is good policy to keep them confined to their yards until the middle of the forenoon; otherwise the eggs are likely to be scattered all over the lot. Occasionally a duck will hollow out a little nest under a bush or behind a board or in the litter, and lay her eggs for several consecutive days if they are not discovered and removed. And infrequently a duck will manifest an unsettled state of mind as though half tempted to try sitting on her eggs, probably prompted by a family-raising instinct virtually eradicated but of which she is still dimly conscious. An Indian Runner which is really broody, seldom is found, however.

Leghorn hens are often termed egg machines, but the appellation is even more appropriate when applied to Indian Runner ducks. The records which they have made are astonishing. In the eighth annual Australian laying competition two pens of Indian Runners made an average of more than 200 eggs each, despite the fact that they were given no meat. In two years the ducks beat out the White Leghorns, the best breed among the hens, by ninety-five eggs. These were pencilled ducks, bred to the English standard.

It is a fairly safe prophecy that within a few years white duck eggs will be

found in the markets all over the country. They may help materially to lower the prices of fresh eggs, for the ducks usually lay prolifically in the late fall, when hens are molting and hen eggs are scarce. In fact, amateurs are finding it an excellent plan to have a small flock of Indian Runners on hand to supplement the hens at that season.

It is not quite certain when young Runners will begin to lay—it may be when they are five months, but possibly not until they are seven or more. They will continue to lay well for several years, though, so that it is not necessary to renew the whole flock each season, and after resting through July and August, the old birds are pretty sure to begin laying again in September.

The eggs are as good as hen eggs for any purpose and so large that two of them are equal to three laid by hens. They are excellent for the breakfast table, cooks prize them for cakes and custards and when pure white, no objection can be raised on the score of appearance. The best way to cure anyone of the unreasoning prejudice against duck eggs which some people have is to present him with a sample. Duck eggs do not keep as well as hen eggs and probably will not be used in large numbers for cold storage purposes.

It is a point in favor of Indian Runners that they are little troubled by vermin and are subject to few ills if kept in clean quarters. They need never to be coddled and there are few losses even among the growing ducklings, after the first week. With a mash of bran, ground oats, corn meal, beef scraps and cut alfalfa for the morning meal and corn at night, they will thrive splendidly. Some breeders also give a light feeding at noon. If this practice is once begun the ducks will protest vigorously and noisily in case it is discontinued. They are creatures of habit and like to have all days the same. They do not seem to care for a change in their rations, even. Variety to them is not the spice of life.

Altogether, the future of the Indian Runners seems fully assured. The present boom may not last, but gradually these ducks will find their way into the yards of farmers and amateurs and the owners of country homes far and wide. Their utility qualities will commend them to the men and women who seek breakfast eggs to which no suspicion of cold storage clings, while their beauty of form and feathers, their interesting ways and their stylish carriage will make them favorites among the fanciers.

Nature Touches for Farm Homes

Wild Plants Lend an Atmosphere of Culture, and Bring Home Visions of the Moods

By FLORA PRISCOLL

This article will be of special interest just now, when our readers are planning new things for beautifying the home surroundings. The idea of bringing home ferns, flowering plants and shrubs from the woods is novel and full of possibilities, as the writer has clearly shown. Of particular importance to the busy people who see the front of their houses only in resting hours, is the matter of making the back yard more of a landscape garden. Every reader will find here suggestions worth trying out.

"For lo! the winter is past—
The flowers appear upon the earth;
The time of the singing of birds is here."

The robin's call has heralded the arrival of spring delights. Sympathy with Nature's movements has impelled preparations for home-adorning from seedsmen's supplies and nursery stock. But there is one nursery not often considered. It lies within the reach of all country dwellers, and of not a few city residents as well—and its treasures are free to all. On wooded hills and valleys, in swamps and along roadsides the gardens of this nursery flourish. If this is not so in all the provinces, it is at least so in Old Ontario, where abounds a profusion of wild things to gladden the eye.

Cultivated flowers and plants have their place truly and we could not spare them. But those in our nursery have their advantages too. The seeding has already been done by Nature and at first hand we may choose from nurtured or flowering plants. An infinite variety is offered us; besides the novelty spells to flower-lovers—"a fresh flower, a fresh delight." In addition, all varieties are either perennial or self-sowing and this nursery is open from spring to autumn. Likewise, wild plants require from busy people very little of the care and attention necessary to ordinary garden growth. When once they are started they will take care of themselves. Although so easily obtained the home-maker is perhaps too busy to procure any. Then surely a child could go or some member of the household passing by the woods about his daily work.

Moreover, wild growing things have a charm peculiar to themselves besides that of coloring and fragrance. The touch of a wild flower outside or fern inside gives a suggestion of its native wilds which appeals to many. Furthermore,

WILD COLUMBINE

they may be blended to great advantage with other plants in the garden or house. We have seen many city homes, especially, rendered more attractive by wild natural growths—used either alone or combined with cultivated plants—appearing in conspicuous or unexpected places in the grounds. Within was no lack of harmony between wild ferns and hothouse decorative plants.

Rejuvenating the Backyard

Not only for mingling with cultivated plants are wild flowers useful, but many varieties will flourish where such others will not even grow. For this reason they can be made of particular value to hide unsightly places or waste corners that would otherwise be eyesores around the home. Certainly mown grass and flower-beds in front of the house are fitting, but the much-used back-doorway made attractive, could be appreciated more by the busy inmates, by the woman, most of all, who is not called by her work out into the open but mainly to the narrow boundaries of the kitchen walls. A pleasing vision of green fields and woods beyond is too often obscured by barns and stables. The outlook is upon dirty back-yards or barnyards and untidy fence corners in the foreground. "Nothing would grow in such places" some may say. Wild plants would — and could greatly change the aspect. Of all wild plants the fern is possibly the most popular. A general favorite is the big fern common to the banks of many streams, rivers, and lakes, also roadside wooded swamps. A good specimen is often over three feet high, and at least six or eight inches across. It will transplant any time in spring or summer, will flourish in dark damp corners where other plants will not grow—and singly or in groups makes a handsome decoration. Numbers of luxuriant growths of these are often seen in city

gardens or by verandas or steps. We can remember a fine bed at home, shaded by the north wall of the house and others growing under shade trees with trilliums or violets or in odd corners. There are other large ferns of the later winter varieties that may be procured in summer or fall for winter use.

All ferns, whether within or without must have a rest during the year. The potted ones may be put away in the cellar after dying down and later be brought to life again. Try whatever varieties are near at hand and they will all give gladness. In city homes, ferns are always much admired, as exterior or interior decorations. In the farm houses we have seen adorned with them they lent an atmosphere of culture and daintiness no ordinary house plant (for example a fuchsia) in a gay jardinere could give.

Window-boxes and Garden Beds

Near the finer, summer ferns are found varieties of long-stemmed, large yellow and blue dog violets, while the smaller blue, white and yellow occur in drier woods. All kinds transplant well to window-boxes, corners by fences or steps, and will flourish under trees in close proximity to grass. All of these with the earlier hepatica or liver-leaf, known usually as mayflower, and bloodroot may be taken from the woods when past flowering ready for the next season and the foliage of most is pleasing. Others that do well mixed with ferns and myrtle, or periwinkle, in boxes or in more protected places are jack-in-the-pulpit, or Indian turnip, wlld ginger, wild geranium, Solomon's seal, nitre wort or foamflower, false Solomon's seal, crinkle-root, the trilliums known as red and white lilies, and many more. Dutchman's breeches and squirrel corn are pretty, both for leaf and flower, though harder to transplant, and the more rarely found lady's slipper and pink or moccasin-flower of the orchis family, which we have sometimes seen potted. Some of the abovementioned varieties flower early, others like dog-violets from May until July.

The wild red columbine looks well in the garden beside its cultivated sisters. The yellow evening-primrose from river banks may be planted with perennials like the phlox. Clumps of marguerites, golden rod, wild sunflower, and brown-eyed Susan fill up well dark corners. With all flowers as with ferns, take up lots of humus—black earth—and be sure the root is entire. If possible, transplant wild things before a rain, in a wet season or at night, never under a midsummer sun. To give them a good start shade and water are required.

Climbers for Fences, Woodshed and Screens

Vines are attractive and useful and may be secured in May or June and late September. The wild grapevine is perhaps the most generally desirable for utility. It makes a splendid screen for the front or back veranda so that the latter may be used at times instead of the hot kitchen for peeling vegetables and doing other work. The same vine will cover fence or all unsightly walls of old woodsheds and kitchens. It makes a better screen and the leaves last longer than the Virginia creeper or almost any other vine so used. The fruit may be

DUTCHMAN'S BREECHES

utilized too—and wild grape-jelly is not to be despised. The wild Virginia creeper, so briliant red in autumn will grow over walls, verandas and fences, but must not be confused with poison ivy. The former has a leaf of five sections and blackish berries in fall, as contrasted with three leaves and whitish berries of the latter. The wild clematis—travelers' joy, or virgin's bower—is very pretty when trained up veranda pillars or over fences and wire netting. The fragrant white blossoms distinguish it in July and August; later on the feathery seed-plumes appear. This often trails over the ground and brush-heaps, and all three vines are found growing over rail fences, bushes and trees and will cover old trunks.

Ornamental Shrubs from the Woods

Rose bushes and ornamental shrubs from nurseries are properly enough very popular. But wild roses will often make some dreary spot pink and fragrant.

WILD CLEMATIS

They endure neglect, blossom and spread themselves without the care necessary to the more costly varieties and can be planted while blooming in June or July. The fragrant sweet-brier is less easily transplanted though occasionally met with in gardens. The red swamp willow makes a nice ornamental shrub with its red stems, dark leaves and white berries. Others are the small-flowered spreading dogbane, the elderberry bush, pretty in leaf and blossom, and hawthorn, rural England's hedge. If sumachs are desired the common or staghorn sumach, so flame-like in fall, is the right one. It can be best distinguished from poison sumach, not by the flower-clusters, but in autumn by the crimson fruit-plumes as contrasted with the whitish or dun-colored fruit-head of the poison. All these hardy, wild bushes will give more beauty than may be imagined to a bare yard. They have grown accustomed to abuse so may be planted in exposed places.

As with ferns and flowers, a choice of vines and shrubs will be confined chiefly to whatever growth is in the neighborhood. With all, when taken up, care should be taken to disturb the root system as little as possible, and as much soil should be left clinging to the roots as they will retain. Upon planting, a hole should be dug large enough to fully extend the roots. For shrubs and vines of larger growth several quarts of water should then be poured upon them and the soil firmly packed. The top-soil should be left lying loosely and the vine or shrub must be frequently watered. Young vines and shrubs transplant best, larger ones should be cut off somewhat and if not transplanted early in the season, not until September.

We have said nothing of the wealth of shade trees in embryo amongst the seedlings and saplings of the forest, but only mentioned the wild things so called. With so great a variety as the foregoing, a spot may be found surely in every home for some of Nature's nursery products. All those mentioned will grow and many others as well if tried. Don't be discouraged if some things must be replanted. Study the natural environment a little. In the end, the wild touches will reward perseverance.

THE REAL TURKEY TROT

"When the young turkeys are as large as quails we let them out of the coops. After they are four months old, they will usually take care of themselves, but we always try to know where to find the ones younger than this, so that when a shower comes up we trot them in under cover." Such is the experience of one farmer who has made a success of rearing turkeys. His feeding methods are also interesting.

The first feed is dry bread. A cake is made by taking one quart each of cornmeal, middlings, and bran and one pint of sifted ground oats, seasoned with salt and pepper with some sour milk added. This is baked and will last for several days. After the turkeys are ten days old they will eat crusts moistened in sweet milk after they are squeezed dry. Nothing sour is given them. Sloppy feed is also tabooed. Sometimes hard-boiled eggs are fed. At two weeks of age whole wheat can be fed at night, while cracked corn is given at one month.

A Farm Review of Reviews

Live Topics of Interest to Every Farm Reader

Little Stories of Big Farmers

How Charles Schmidt and His Sons' Applied the Principles of Business Efficiency to a Saskatchewan Ranch, to the Tune of an 80 per cent. Profit

SCIENTIFIC efficiency — that's the phrase to conjure with, just now. Here is a little story of how it was invoked, a dozen years ago, to run a farm, writes A. P. Hitchcock in *Country Life in America*. Perhaps you may have supposed that this particular sort of efficiency had to do only with factories or railroads or government bureaus. If so, you have another think coming.

Up to about 1900 Charles Schmidt owned an eighty-acre farm in Minnesota —or would have owned it, had the mortgages been paid. It was a fair enough farm and he was a pretty good farmer, as farmers go; but the income was small, and the outlook was far from rosy. Prices for produce were low; cost of labor was high. He could make a living perhaps, but that was all. And Charles Schmidt felt that an intelligent farmer, working hard and long hours, ought to make more than a mere living.

He had two sons. One had obtained a position in a neighboring bank, and was showing brilliant business aptitude. The other had just graduated from an agricultural college.

One day the three, father and two sons, held a farm congress and agricultural institute, all by themselves. They went over the whole thing, from A to Izzard. Out of their long debate finally came a sort of tripartite partnership. Each one felt himself and was felt by the others to have a special gift in a special direction. The elder son had a marked talent for business. The younger son had been a diligent student in college and had brought from it clear understanding of the great principles of agriculture, and a knowledge of modern scientific methods. The father was experienced in the daily work of the farm; he knew the tricks of the trade and the signs of the sky, and what to do with the early and the latter rains.

They decided to bunch their abilities, to twist their talents into a threefold cord, and see if it wouldn't have strength enough to haul them all to a greater success than any one of them could hope for working alone. They determined to try a new kind of farming which should be based on scientifically sound principles, should be managed with strict regard to business efficiency, and should be advised by the warnings of tested experience; and they decided to make their trial in a fresh field.

So they "trekked" across the border into Western Canada and took up three homesteads in Saskatchewan, near what is now the city of Saskatoon. They began to raise wheat, because that was the natural crop for their situation, because it was always readily marketable, and because, specializing in it, they might be able to learn its whims so as to control them for their own profit. The father contributed his experience gained in a lifetime of practical farmwork; the younger son put in his knowledge of the fundamental principles of agriculture, learned during his college course; the elder son, fresh from his bank training, contributed his business aptitude.

Success came to them from the very first.

They purchased additional land, as fast and as much as they could handle with profit. Now they own and manage one of the largest and best paying wheat farms in the world. It has all come to them from their forceful persistence in that first idea—to manage the farm as a business, on business lines, with business methods, and all keyed to the highest note of scientific efficiency.

From the outset there has been no "rule of thumb" or guess-work about their farming. They began by finding out the "how" and the "why" for every acre—nay, for every tool and team and every stroke of work. Of course they "keep books." That, however, is a mighty small fraction of what they include in their idea of business efficiency. They don't keep books merely to tell them what they have done but mainly to show them how to do better.

It would take a volume to explain all the details of their management. Here is one example, given merely as an illustration of the plan. Their entire big ranch is divided into blocks of forty acres each, and a separate account is kept for each square. They can tell at a glance how each one is doing; whether it is falling off in production; whether the cost of up-keep is increasing; whether it needs fallowing or change of crop; whether men and tools are doing standard work.

For they have a standard of work, including every detail of the year's activities. They know by test and record exactly what plowing or seeding or harvesting one good man with one good team can do on each particular "forty." The standard naturally varies with the character of the land or the crop. But whenever the standardized mark is not reached, investigation follows promptly. If the fault is found in the tools, they are repaired or replaced; if it is in the teams they are changed, if in the men, they are dropped in short order. Even the detail of caring for the work horses is standardized. A special gang of barn men feed and water them; clean them; harness them; care for them if sick or hurt. Instead of the field hands being compelled to put in an hour before work and another after work in the stables tending their teams, they simply take the horses from the yards in the morning, harnessed and hitched, and return them to the yards at the end of work to be unharnessed and stabled by the barn men. This relief from vexatious overtime chores tends to better nature among the field hands, which means better work and more of it. At the same time the stable men quickly become expert hostlers, are able to economize in feed, to keep the animals in better condition, and to save veterinary bills. The first year this plan was adopted saw a saving of $1,300 in stable expenses and machinery repairs—more than enough to pay the barn gang's wages.

These are only illustrations of the business efficiency which the Schmidts put into every detail of their wheat-growing. They have been at it now about a dozen years. A single field of 3,000 or 4,000 acres in wheat is nothing unusual for them. A year or two since, one field of 3,000 acres, yielding an average of about thirty bushels to the acre, brought them in gross returns of $24.80 per acre. By their system of standardized efficiency they had kept the cost of producing the crop down to $4.80 per acre. This left them $20 an acre clear profit, or $60,000 from the whole field. When any business can report a net profit of $20 out of every $24.80 received, it looks as if that business were about as "scientifically efficient" as reasonable men could demand.

Skin Poisons From Plants

Did You Know that Some Primroses Caused Eczema-like Troubles?

THE fact that Primula obconica is poisonous to the touch was discovered in 1889, but the discovery was so slow in coming to general attention that for years afterward such cases as the following were of common occurrence: An English doctor was called to attend a gardener suffering with what appeared to be an attack of erysipelas of the face and hands, writes Calvin Frazer in the *Country Gentleman.* It yielded to the usual treatment and the patient returned to work in his greenhouse, whereupon the disease immediately reappeared. The same thing happened several times. Finally the doctor ordered his patient to bed. Even while confined to his room the gardener had two fresh attacks of the disease. At length it transpired that the patient was in the habit of making funeral wreaths of Primula obconica, and in his enforced idleness had continued this work in his bedroom. On ceasing to work with the plant the disorder speedily disappeared. Neither doctor nor patient had suspected the cause of the disease.

There can be no doubt that innumerable cases diagnosed as ordinary eczema, due to digestive or other internal causes and treated accordingly, have really been the result of handling poisonous plants. The number of such plants, as we shall presently see, is very great, but Primula obconica is one of the most dangerous and therefore deserves special attention.

Dr. A. Nestler, of Prague, the leading authority on primrose poisoning, relates the case of a certain professor who kept some of these plants in his bedroom and, without suspecting the cause of his trouble, suffered so severely with an eczema-like affection that he was unable to sleep at night. Finally he had to abandon his work and put himself in the hands of physicians. He was treated for months by eminent dermatologists without obtaining relief, until he happened to banish the primroses from his room. Then the symptoms at once subsided.

According to Doctor Nestler, no one is absolutely immune from the effects of this plant. He cites cases of gardeners who, after handling it with impunity for years, have finally become infected. In this respect its effects appear to be as erratic as those of poison ivy. The severity varies greatly. Sometimes the effects are almost imperceptible; in a few cases on record they have led to fatal attacks of blood poisoning. Actual contact with the plant or its poisonous secretion is found to have occurred in all cases, but it frequently happens that the secretion is carried by the hands to other parts of the body, which become equally infected.

As in the case of ivy poisoning, the symptoms do not appear until many hours or even several days after exposure, and this explains why the cause of the trouble so often remains unsuspected. Cases are recorded in which the period of incubation, so to speak, was as much as ten days. The first manifestations of trouble are a redness and swelling of the skin, with intolerable itching. This may be followed by the appearance of wheals, blisters, pustules and severe ulceration. The attacks is aggravated by any constitutional tendency to skin disease. One attack does not insure immunity from a second, but has just the opposite effect: it makes one more sensitive to subsequent infection. Here again we have a parallel to ivy poisoning.

A Slow-acting Poison

The poison of the primrose occurs in its glandular hairs. While these are not stiff enough to tear the skin, as happens in nettle poisoning, they easily break and discharge an irritating fluid. This is absorbed into the skin gradually; hence the slow action of the poison. While the poisonous principle of the plant might easily be conveyed from one person to another, as, for instance, in shaking hands, the disease itself does not appear to be contagious.

The treatment of primrose poisoning of course entails, first of all, the removal of the plants and the cleaning of all objects with which they may have been brought in contact. After the plants have been handled, and before the disease has declared itself, the trouble may often be averted by thoroughly washing the hands in 96 per cent. alcohol and then applying soap and water with a scrubbing brush. The eczema itself should be treated with soothing local applications, such as powders, antiseptic lotions and cold-water bandages. Bathing with a weak solution of creolin has been found to give relief.

In more severe stages the disease is treated with carbolic poultices, zinc ointment and various other preparations; but it is then time to consult a doctor. Gardeners who are obliged to handle Primula obconica should wear gloves when doing so and should burn all leaves that are cut or that fall from the plant.

A few other species of primrose are poisonous to particularly sensitive people, especially the Chinese primrose, Primula Sinensis, so commonly cultivated in gardens and greenhouses. Rare cases of poisoning by Primula mollis and Primula cortusoides are on record, but, so far as known, all other species of the genus are harmless. A pretty Alpine plant closely related to the primroses, Cortusa Matthioli, which is occasionally grown in shady parts of rockeries in this country, produces effects that are very much the same as those of Primula obconica.

We have compared primrose poisoning with ivy poisoning. Of course the "ivy" in question is really a misnamed sumach, one of the three species of the genus Rhus whose poisonous properties are only too well known to the American public. Another poisonous sumach, Rhus vernicifera, grows in Japan, and is the source of a beautiful and celebrated lacquer. Not only do the natives engaged in the manufacture of this lacquer suffer from the poison, but it is said that lacquered tables imported into America from Japan are sometimes the cause of painful eruptions.

What other plants have similar disagreeable properties? Our forefathers believed that the upas tree of Java was not merely poisonous to the touch, but actually destroyed all animal and vegetable life for miles round. This tale was a characteristic medieval exaggeration of the fact that a deadly poison is prepared from the juice of the upas, while when a tree has been newly felled or its bark extensively wounded it exhales an effluvium capable of producing cutaneous eruptions.

Stinging nettles, of several species, are unpleasantly well known in this country and in Europe. They are covered with brittle hairs, which scratch the skin and at the same time break at the tip, discharging their poison into the wound. One of the most formidable of all stinging plants is an East Indian nettle known as the "devil's leaf." The painful effects of its sting last for months or years, and are much aggravated by the application of water, or even by humid weather.

As a matter of fact, the number of plants or parts of plants that frequently or occasionally produce painful disorders of the human skin is exceedingly large. In medical literature the term dermatitis venenata is applied to all forms of inflammation of the skin caused by external agencies, whether from the animal, vegetable or mineral kingdom. It includes the results of contact with irritating substances used in many arts and professions, and is therefore common among dyers, printers, chemists and druggists, collectors of medicinal plants, silk weavers, soap makers, and so forth. By far the largest number of these agencies, however, belong to the plant world.

A CHICKEN COOP

A combination two-in-one poultry coop for setting hens and afterwards for hen and chickens is in use at the Montana Experiment Station. It is 6 feet long, 3 feet deep and is divided into four compartments by removable partitions. At the back of each compartment is a nest, at the front is a sliding door which opens into a detachable runway. The front of the little house is three feet high and has an opening in the upper half, lengthwise covered with wire screen and closed by a hinged door at the top.

Four hens are set in this coop at one time. As soon as the chicks come, two of the partitions are taken out and one hen given both hatchings, while the other hen is put to more profitable work. When the chicks are ready to do without the hen, the hens are taken out, the other two partitions removed and perches put in for the chicks to roost on. The runways in front are then taken away also.

Training the Saddler

Some Practical Ideas in the Breaking of the Colt for Hunting and Jumping

By JOHN Y. BEATY

IN training a saddle horse, the same as in training any other horse, the first thing to do is to gain the animal's confidence and also teach him that you are the master.

With vicious horses, and there are a few, extreme means may be necessary. Usually a horse can be conquered by throwing him a time or two. About the best way to do this is to first strap up his foot with the pastern against the elbow. Then attach a strap to the pastern of the other foot and run through a surcingle, bring the horse to his knees and then onto his side. If, after the horse is allowed to get up, you feed him a little oats and pet him, you will find that the business of conquering his disposition is not so difficult or so long as you might have thought.

When you first begin to train a young horse for the saddle, it should be given regular exercise each day. After the exercise, at least for the first few weeks, his legs should be rubbed when he is put into the stable. It is also a good plan, if you have the time, to wash the legs and bind them with flannel bandages. These bandages retain the heat and help circulation and also support the tendons which are receiving unusual treatment in the new work the horse is being given. It also prevents wind puffs and swellings.

Teaching by Leg Movements

A riding horse should be made to understand the meanings conveyed by the movement of the legs of the rider. The first thing for the horse to do is to go straight ahead. In teaching this, do not keep the lower part of the legs against the horse's flank, but when you wish him to go forward, give repeated taps with the leg against the horse's body, tapping the horse near the girth. Do not reach too far back. At the same time that you make this leg movement, cluck to the horse and give a few light taps with the whip. Thus he will learn that the movement of the legs means for him to go ahead.

From the time you begin to train the horse with the reins, get into the habit of holding them firmly. They do not need to be tight, but they should always be held with a regular tension.

To teach the horse to stop, lean back slightly in the saddle and pull on the reins with a steady pull, gradually increasing the pull. At the same time, speak to the horse and tell him to "whoa."

The first lessons with the horse should be on soft ground. Take him into a field or pasture where there are no rocks for him to be injured on. Never attempt to give the first lessons on a hard road.

A young horse that is just beginning his training will require more feed than

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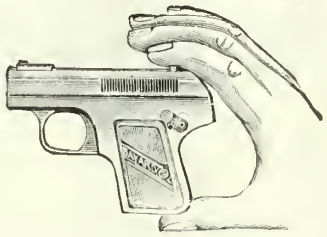

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he has been receiving up to this time, but be careful that he is not overfed. The unusual exercise will give him a good appetite, but he should never receive his grain immediately after coming in from exercise. It is all right to give him a supply of hay in his manger after he comes in, but the grain should not be given until he has been in the barn for ten or fifteen minutes.

Sense About Watering

Never water a young horse, or in fact any horse, after he has had violent exercise and is warm, unless the exercise is to be continued at once. If an animal that has become warm from work is watered and is allowed to stand still, even for a few minutes, he may become foundered. This is due to the contraction of the internal blood vessels by the cold water received in the stomach. This does not take place, however, when the exercise is continued.

A young animal just beginning to work, should have most of his hay at night and should have the largest feed of grain at night. Usually a very few oats at noon is good, but too much should not be fed at this part of the day.

Naturally a saddle horse must first be taught to walk properly and at command. Then he must be taught to stop. Later he should be urged into a trot and this gait developed until he does it well and obeys all commands. Then he may be urged into a gallop from the trot. This should be done by loosening the reins, speaking to him and urging him with the legs or even with the spurs until he increases speed. This urging should be done vigorously with the expectation of its producing immediate results.

A very important, and perhaps one of the most difficult lessons to teach a young horse, is to back. This must be done with about the same means as are used to teach the horse to stop. The horse, being at a standstill, the rider leans back slightly in the saddle, pulls back steadily and firmly with the reins and commands the horse to "back."

Spurs are used by many riders and they have two good functions. One is to urge the horse forward. The other is to punish him.

Punishment should be given vigorously when it is given, but should never be given except when really necessary. The use of the spur should always be as follows:

Use of the Spur

The spurs are placed against the animal just back of the surcingle. They are then pressed inward firmly until the desired result is produced. The horse should never be kicked with the spur, for a great deal of damage might thus result.

In riding a horse at a trot, the rider rises in his stirrups at each alternate step. When going at the trot, the horse lifts diagonal feet at the front and back at the same time. The rider rises in the stirrup at each alternate step and sometimes gets into the habit of rising on the same step. That is, every time the horse lifts his right front foot, the rider rises. This should not be allowed because if the rising motion is always repeated un-

der the same conditions, the horse will become fatigued more easily and will get into the habit of traveling out of a straight line.

Although not every riding horse is used under conditions where he will need to jump over a fence or across a ditch, it is a very good plan if you have the time, to train your horse to do these things.

Training to Jump

In training a horse to jump, he should first be given lessons without a rider. Drive him through a chute in which there are poles and ditches, over which he must jump. Have someone at each obstacle with a whip to urge him over. This urging should not be too vigorous, however, at least not at first.

After a horse learns to jump over a low object in the chute, the object should be raised. A pole is usually best and this can be arranged on a 2x4 somewhat after the manner of the jumping pole used by athletes. If the horse should strike it, it would roll off without injuring or throwing him.

After the horse has become accustomed to jumping over these poles in the chute without a rider, he should be taught to do it with a rider.

In teaching a horse to jump over ditches, you will probably find that the first time he comes to a ditch, he will stop and nose around to see if the ground is firm. Sometimes he will refuse to jump over it at first. Do not urge him too much in the beginning. Allow him to stop and survey the ground if he wishes. As soon as you have him taught to jump over small ditches, then try him on wider ones and do not permit him to stop at the edge.

An ordinary horse can jump quite a distance, but no horse should be urged to jump over an object that is beyond his limit.

If he has two or three falls as a result of unsuccessful attempts, it will not only discourage him, but may injure the horse or the rider.

For Hunting

If you wish to use your horse for hunting, it is very necessary that he become accustomed to the noise of firearms before he is taken to the fields. This can be done best by holding him and petting him at some distance from a person who is shooting. After the horse quiets down and becomes accustomed to the noise, lead him towards the person with the gun and feed him a small panful of oats.

After this lesson has been repeated several times, the horse will not hesitate about going to the person that is making the noise. After this, a gun or revolver may be fired from his back.

Here are a few rules that are laid down by the instructors in the United States army that are valuable for anyone who handles horses.

Never threaten, strike, or otherwise abuse an animal.

Before entering a stall, speak to a horse gently and then go in quietly.

Never take a rapid gait until the horse has been warmed up by gentle exercise.

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When You Tire of Plain Bread

Wholesome Substitutes of Homemade Varieties

By JEAN MacKENZIE

VARIETY is the spice of life, as some wise philosopher has said, and also of the food we eat, according to dietitians. Monotony of diet, declare these authorities, is not only injurious to the health, but it is a crime on the part of the cook for which there is no necessity in these days. Never before was so much attention paid to the wise selection, and proper cooking, of the food that makes the man! In no other branch of the diet of the average person is there so little variety as in the bread used, chiefly, I suppose because we do not tire of plain bread, as we would of the continuous use of any other staple. In spite of this fact, a change is a very good thing, and it can be had so easily, even in the plain breads, by the substitution of some of the other flours for the usual wheat flour. The value of these other flours as breadmakers is not realized as it ought to be, for they make delicious, as well as nutritious bread. Among the fancy breads, the variety which may be obtained is practically endless.

Entire Wheat Bread

2 cups scalded milk
¼ cup sugar, or
1-3 cup molasses
1 teaspoon salt
1 yeast cake, dissolved in ¼ cup lukewarm water
4 2-3 cups coarse entire wheat flour.

Add sweetening and salt to milk, cool, and when lukewarm add dissolved yeast cake and flour. Beat well, cover, and let rise to double its bulk. Again beat and turn into greased bread-pans, filling them half full. Let rise, but do not leave it to double in bulk this time. Bake in a moderate oven.

Rolled Oats Bread

2 cups boiling water
½ cup molasses
½ teaspoon salt
4½ cups flour
1 cup rolled oats
1 tablespoon butter
½ yeast cake dissolved in ½ cup lukewarm water.

Add boiling water to oats, let stand one hour. Add molasses, salt, butter, yeast and flour, let rise, beat thoroughly, turn into greased bread-pans, and let rise again. Bake in moderate oven.

Rye Bread

1 cup scalded milk
1 cup boiling water
1 tablspoon lard
1 tablespoon butter
1-3 cup brown sugar
1½ teaspoons salt
3 cups flour
¼ yeast cake dissolved in ¼ cup lukewarm water
Rye meal.

To milk and water add lard, butter, sugar, and salt; when lukewarm, add yeast and flour, beat thoroughly, cover, and let rise until light. Add rye meal until dough is stiff enough to knead. Knead thoroughly, let rise, shape in loaves, let rise again, and bake.

Boston Brown Bread

6 tablespoons molasses
3 cups sweet milk
1 teaspoon salt
3 cups graham flour
1½ cups white flour
1½ teaspoons soda

Mix ingredients in order given. Butter molds, fill half full of mixture, and steam three hours. One-pound coffee tins make very good dishes for steaming this bread.

German Caraway Bread

1 cup scalded milk
1 cup boiling water
1 tablespoon each of lard and butter
1½ teaspoons salt
1 tablespoon sugar
1 yeast cake, dissolved in ¼ cup lukewarm water
1 cup white flour and enough rye flour to knead.

Mix same as ordinary bread, and after the first rising, add while kneading one-third teaspoonful caraway seed. Shape, let rise again, and bake in a loaf.

Date Bread

1 cup warm wheat mush
¼ cup brown sugar
½ teaspoon salt
1 tablespoon butter
Flour
¼ yeast cake
¼ cup lukewarm water
2-3 cup chopped walnuts
2-3 cup dates, stoned and chopped.

Mix first four ingredients, add yeast cake dissolved in the water, and flour to knead after first rising. While kneading add the dates and walnuts. Shape into a loaf, let rise again, and bake in a moderate oven.

Walnut Bread

2 cups white flour
2 cups graham flour
2 cups milk
1 cup brown sugar
1 teaspoon Mapleine
1 egg
1 teaspoon salt
4 teaspoons baking powder
1 cup chopped walnuts

Mix egg, sugar, and salt together, add milk, then flour with baking powder sifted through it, lastly nuts and mapleine. Bake in a moderate oven.

Spider Corn Cake

¾ cup corn meal
¼ cup flour
½ teaspoon salt
1 tablespoon sugar
1 cup sweet milk
½ cup sour milk
1 tablespoon butter
1 egg
1-3 teaspoon soda.

Have a small, short-handled, cast iron frying pan heating on the top of the stove while you mix this. Put all the dry ingredients (except soda) in a sieve, and rub into a bowl. Dissolve soda in ½-cup of the sweet milk, add it to the sour milk and stir, with the egg, into the mixture. Butter the hot pan with the butter, and pour in the batter. Now pour the rest of the sweet milk slowly and gently over the top of the mixture in the pan. Do not stir. Bake half an hour in a

moderately hot oven. Slip out on a hot plate, and serve at once.

German Coffee Bread

Make a sponge with 1 yeast cake softened in ¼-cup lukewarm water, 1 cup scalded milk, and flour. When light add—

4 heaping tablespoons melted butter
4 heaping tablespoons sugar
½ teaspoon salt
2 well-beaten eggs
½ cup Sultana raisins
Grated rind of 1 lemon
1 teaspoon vanilla.

Flour to make very stiff batter, beating well. When light again pour into buttered and floured round cake tin, cover and let rise. When ready to bake, brush over with beaten egg, and dust thickly with sugar and cinnamon. When cold, sprinkle with icing sugar.

Scotch Potato Scones

1½ cups flour
1-3 cup butter
1 cup mashed potatoes
2 teaspoons baking powder
½ teaspoon salt
1 egg

Sift flour, salt and baking powder together, add mashed potato, and rub in lightly the butter. Make a soft dough by adding the egg, well-beaten, and a little milk, if necessary. Make the dough of the right consistency to roll out. Divide into three parts, and roll out into rounds half an inch thick. Cut each round into four, and cook on a griddle. Split and butter them, and serve hot.

Buttermilk Scones

1 pound sifted flour
½ teaspoon salt
2 tablespoons baking powder
2 tablespoons butter
Buttermilk.

Mix to a soft dough with the buttermilk, roll out one-quarter-inch thick, cut in triangles, and bake to a nice brown on a hot griddle.

Tea Biscuits

3 cups flour
½ teaspoon salt
3 teaspoons baking powder
½ cup lard
Milk to make a soft dough.

Roll out into a long strip four inches wide, spread with ½-cup softened butter, and 1 cup sugar. Roll up like a jelly cake, cut in slices, and bake in a quick oven.

Brioche Cakes

1 cup scalded milk
½ cup sugar
2-3 cup butter
½ teaspoon lemon extract
¼ cup yolks of eggs
½ cup whole eggs
2 yeast cakes
4 2-3 cups flour.

Cool milk; when lukewarm add yeast cakes, and when they are dissolved, add remaining ingredients, and beat thoroughly with the hand ten minutes; let rise six hours. Keep in ice-box over night. In the morning turn on a floured board, roll in a long rectangular piece one-fourth-inch thick; spread with softened butter, fold from sides toward centre to make three layers. Cut off pieces three-fourths-inch wide, cover, and let rise. Take each piece separately in hands and twist from ends in opposite directions, coil, and bring ends together at top of the cake. Let rise in pans, and bake twenty minutes in a moderate oven. Cool, and brush over with confectioner's sugar, moistened with boiling water to spread, and flavored with vanilla.

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Always heat the Biscuit in the oven to restore crispness. For breakfast serve with hot milk and a little cream, adding salt or sugar to suit the taste. Deliciously nourishing for any meal in combination with sliced bananas, baked apples, stewed prunes, or canned or preserved fruits. Triscuit is the Shredded Wheat wafer and is eaten as a toast with butter, cheese or marmalade.

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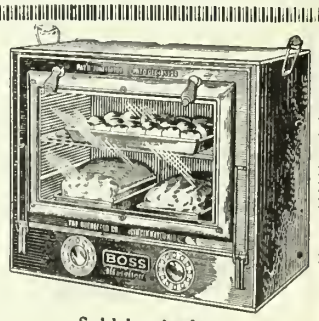

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THOUSANDS of people are suffering from chronic ailments just because they neglected to treat them at the start. At this time of the year, danger of exposure is most prevalent. Unexpected exposure and muscle overstrain, if not attended to at once, lead to painful results, sometimes never to be got rid of. Here is one of the most trying features of farm life. Often the neglect means torturing pains in the muscles and serious discomfort, which interfere with the duties of the farm and household at most critical times. Most cases of painful muscular rheumatism can be traced back to neglect. It is a most trying experience to find oneself helpless to relieve the pain. Why run the risk of serious trouble when a bottle of Dr. Thomas' Eclectric Oil can be kept always on the shelf at a trifling cost—ready the moment it is needed to relieve and prevent serious results and needless pain? Dr. Thomas' Eclectric Oil, well rubbed in, goes instantly to the very seat of the trouble. The quick relief experienced is surprising, the pain disappears and the sore and inflamed muscles become pliant without loss of strength. Here is one of the best known means of securing quick and satisfying relief.

No farm house should be without it. Dr. Thomas' Eclectric Oil is known as a simple, effective remedy. You can get it everywhere. Next time you go to town, get it from your druggist or dealer. **Price 25 cents per bottle.**

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Northrop & Lyman Co., Ltd.

Toronto

Get a free sample

of this reliable, never-failing liniment.

Douglas' Egyptian Liniment

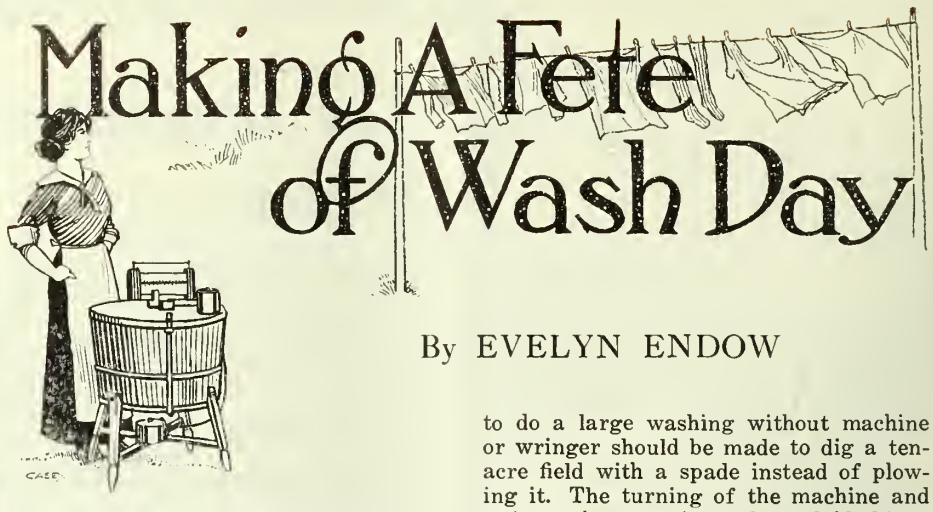
will positively stop bleeding **at once.**

A never-failing remedy for caked udders in cows.

For Sale by all Druggists.

DOUGLAS & CO. - NAPANEE, ONT.

Making A Fete of Wash Day



By EVELYN ENDOW

FOR the woman who is unexperienced in housework probably no work is so difficult and tiring as her laundry work. Fortunately very often she can get her heavy washing done for her, and even if the Chinaman or washerwoman wear out her clothes in half the time, she is too thankful to get it done to calculate the waste in the quickly wearing out linen. If she is unable to do it herself or can spend her time more profitably, she is justified in having it done even at this loss. We hear so much said about the waste of food—the scraps thrown away and the food value lost in poor cooking from defective ovens, etc., but I think just as much can be said about the losses from defective washing. It is not so noticeable at the time, but if one calculates the length of time that sheets, tablecloths and so on are in use one sees a remarkable difference in those laundered carefully at home and those the Chinaman does. The height of extravagance seems to be reached when one lets a hand-made blouse or dress go to the public laundry. It may be possible in the near future for satisfactory laundries to be found outside of the home, but in the meantime let us study the art and science of it and get really interested in the subject. Laundering doilies, centrepieces, real lace, the setting and preserving of colors, and so on is as fascinating as making divinity fudge or a fancy cake, but to most women the weekly wash is a drudgery. It is partly because they have not proper utensils—partly because they do not take to it a thinking mind, but do it mechanically week after week, partly because they dislike it and want to get it done as soon as possible.

The Economy of Machinery

No woman unless she has unusual strength has a right to do a huge washing alone where there are lots of soiled working clothes. The turning of a machine and wringer for the greater part of the day and the heavy lifting of sheets and tablecloths out of the boiler is killing for the average woman and must shorten her life. Fortunately the women who earn their living by it get the particular muscles well strengthened by daily use, but very often they break down under the strain. But the man who would allow his wife or daughter to do a large washing without machine or wringer should be made to dig a ten-acre field with a spade instead of plowing it. The turning of the machine and wringer is a man's work, and if things are well planned beforehand, water heated, soap melted, washing sorted, there is no reason why five or six tubs of washing should not be done in two hours or even less with a man's help. If one uses a man paid by the hour, this means probably thirty cents, as one need not have an experienced man, while, on the other hand it may only mean the small boy's assistance. Change the wash-day rather than do it alone. It is a good thing to have system in your work, but too closely adhering to rules is just as bad as a lack of system. Monday is very often a good day to wash, as Sunday has been a slack day, and you are rested. On the other hand it may have been a busy day; then do not take a big wash not feeling fit for it. My maddest extravagance was once doing some valuable table-linen when I was feeling particularly tired.

There is no particular reason why all the white clothes should be boiled at every washing, especially where one has plenty of clear air and sunshine or frost to whiten them. The work of lifting things out of the boiler is very hard and back-breaking. Usually all the table-linen needs boiling as many stains will not come out without it, also handkerchiefs are better boiled for sanitary reasons. As the clothes come through the wringer from the washing machine, put them in the boiler if they need it, if not put them in the rinse water. The first things which go into a tub of fresh rinsing water need not as a rule be rinsed again, as it only means one more handling, so if the rinse is still more or less clear drop them into the basket to be put out. Use your judgment in these things. If you have not a judgment, cultivate one. It is never too late to learn to think. One need not use bluing nearly as much as some people use it. It should counteract the yellowness which comes from washing with soap, especially with strong soaps, but it should not be used for covering up dirt and bad washing. Very little need be used in the country where clothes are always dried in clean air. You will save changing your rinse water so often if you drop the things on the top of the washing machine as they come out of the boiler and run them through the wringer before putting them in the rinse.

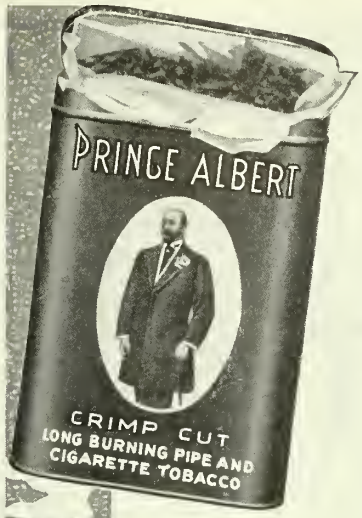
Soaps and Washing Fluids

A good soap and plenty of it is a necessity. If an extra bar of soap will shorten the wash an hour, surely my time is worth five cents an hour or even ten and twenty cents an hour. Of the various washing fluids composed of soda, lye, acids, etc., I do not think there is one that can be used with safety. Of course, if soap is put in the boiler in lumps it is just as liable to eat holes, or to weaken the clothes in spots, as soda or any washing fluid. Soap should always be cut up and melted in soft water and added in this way to soak the clothes, boil them, or to put in the machine. There is nothing better than a good soap, and nothing cheaper in the end. Your fluid will do more than five or ten cents' worth of damage every week by making your clothes wear out sooner. This is the very reason the Chinaman is so hard on clothes. Of course, if you have to use hard water you are justified in softening it by a cheaper means than soap. Borax-soda, ammonia, lye, may be added carefully until the water is softened. An experienced person may be able to tell accurately by the feel of the water, but the safest test is to add the soda, etc., slowly to the water, and from time to time add a little soap to see if it will lather. When you can get a lather to stay five minutes the water is softened. In time you will know just how much to add to a tub of water, but you must work this out for yourself as water varies so much in hardness. The water in which the clothes are boiled must be not only softened, but slightly soapy, otherwise dirt is boiled into the clothes like a dye. Rather than boil and reboil very badly discolored clothes, one can always bleach them by dipping them in soapy water and spreading on the grass. This is the usual method of bleaching unbleached cottons. Fine clothes, like baby's clothes and embroideries, are better bleached by standing in a basin of soapsuds, only be very careful to have them entirely covered with the water or you will have them very streaked.

White Linens and Cottons

Soaking clothes over night is not always convenient, but saves time on wash day as they require less rubbing. One can usually soak the more soiled clothes as tea towels, roller towels in a big pail or basin, but in a house where a kitchen is a room of all trades, it is not so easy to put everything to soak. Colored clothes, especially if they have never been washed should be soaked in strong salt water or in a solution of alum or sugar of lead. It always pays to do so with children's light colored frocks. Do not put a lot of fussy things in a big general wash. One cannot do justice to them on wash day. Leave them until you are less busy and enjoy the laundering of them.

The most general method of washing white linens and cottons is to wash all the things in warm soapy water in a machine or on a board, to boil if necessary in soapy water, to rinse, again to rinse in blue water. After all is said there is no method much better if one



P. A. makes men pipe hungry

Just you get a whiff of "the national joy smoke," and it's dollars to doughnuts you beat it to the nearest store that sells tobacco and stock up. The flavor and aroma of Prince Albert has sure got 'em all backed off the boards.

Just figure on *that*, then realize P. A. *can't bite your tongue*, because the bite's cut out by a patented process. No other tobacco can get in the same class with

PRINCE ALBERT

the inter-national joy smoke

You go to P. A. just like a baby puts its little hand out for candy, *natural like!* It's so delicious that you smoke it all day and all evening—*and there's no comeback!* You make a mental note of *that!*

P. A. is sold *everywhere* in the famous tidy full 2-oz. red tin.

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Prince Albert is manufactured only by the R. J. Reynolds Tobacco Co. at its factories in Winston-Salem, N. C., U. S. A. and is imported from the United States by Canadian dealers. Prince Albert is the largest selling brand of pipe smoking tobacco in the world.

R. J. REYNOLDS TOBACCO CO.
Winston-Salem, N. C., U. S. A.

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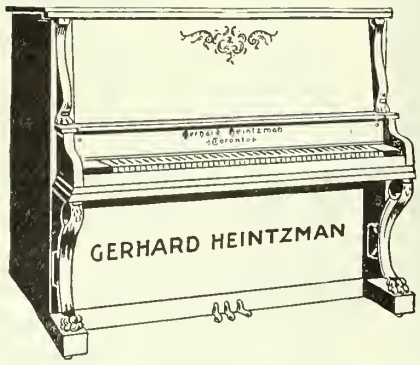
The Ross .22 is a Bull's-eye Tickler

Boys and men who want a .22 calibre rifle which is safe, speedy and accurate should buy the new Ross Cadet Rifle. The barrel has the same care bestowed on it as the other Ross Military Models, which are famous the world over, and the sights are of a novel adjustable peep and globe style, quite equal to many sold at from $5.00 to $10.00.
This rifle is a great one for camp and trail and good enough for any man or boy unless very large game is being hunted.

The Price is only $12.00

If your dealer cannot show one, write direct for illustrated catalogue—sent free.

ROSS RIFLE CO. - - - QUEBEC



Enjoy Your Home Music to the Fullest Extent

What all poetry and prose suffer, if read by a discordant voice, all music suffers through rendering by a strident, harsh unmusical piano.

Inversely, a beautiful voice increases many fold the enjoyment of a recitation, and in quite the same way a sweet, melodious instrument develops a quality in music which otherwise would never be known.

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Canada's Greatest Piano

with its wonderful tonal quality is a music interpreter. If you desire a piano at all, you naturally desire the best procurable. Surely you cannot really be content with anything less than a GERHARD HEINTZMAN.

Let us give you a demonstration of this instrument; or, if not in the city, we will gladly send you the Art Booklet, containing fullest particulars, upon request.

Your present instrument taken as part payment at a fair valuation, and convenient terms arranged.

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The MacLean Publishing Co., Limited
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has a good machine. The boiling of the clothes first to remove the dirt in a solution of soap and kerosene, or soap and paraffin wax is bound to leave the clothes eventually a bad color unless one uses lots of soap and a large quantity of soft rinsing water. Again everything by these latter methods is boiled and if you put them through the machine first you may find that only half need boiling. Some may object to this non-boiling as being unsanitary, but when clothes really do not need much boiling will be where there is plenty of sun and fresh air which will themselves purify the clothes.

Flannels, Silks and Colored Clothes

Flannels, silks, and colored clothes are all washed in warm soapy water, and, of course, never boiled. Very dirty spots must be rubbed with soap, but it is always better to have your soap melted and added to the wash water. Strong soaps, soda, etc., fade colors and ruin silks and flannels by turning them yellow and weakening their fibre. Harsh rubbing is also bad for these goods, shrinking flannels, marking and weakening silks, and removing dye from colored clothes. It pays to use a good soap for all washing, but especially does it pay for flannels, silks, and colored clothes. A stiff silk should not be rubbed at all. Take a child's silk hair ribbon for example. Dip it up and down in soapsuds. If it does not come clean this way, lay it on a table and brush with a nail brush. Rinse without wringing by dipping in clear water and dry without wringing. Iron when nearly dry. A stiff silk blouse is done the same way and all those horrid little creases are avoided. Pongee silk should be quite dry before being ironed.

In hanging out clothes always hang colored clothes in the shade or dry indoors. Flannels are not improved by hanging out in frosty weather, white linens and cottons can scarcely get too much sun to bleach them. Such articles as skirts should be hung as worn—that is from the band. This makes them easier to iron in shape.

Keep a pair of white woolen gloves to hang out clothes in winter. They only cost fifteen cents or a quarter, and are worth it. And never, never hang out clothes in cold weather when you are overheated from washing and when you are not sufficiently wrapped up. One can take pleurisy and pneumonia so easily from it and it is so often the starting point of rheumatism.

To Save Work in Ironing

Some prefer washing to ironing. There is this advantage in the ironing, you can do it in instalments while a wash must be carried to the bitter end or at least to a clear rinse water. Various irons are on the market. One is lucky if one has electricity, for an electric iron saves half the work as carrying the irons to and from the stove and firing up is quite as much work as the actual ironing. My worst objection to charcoal and alcohol irons is that they use up all the oxygen and invariably give you a headache. They are better used in the open air. In

Continued on Page 56.

Our Pattern Pages

Patterns will be sent Post Free on Receipt of Price. Address Pattern Department, Farmer's Magazine, 143-149 University Avenue, Toronto

5523---LADY'S HOUSE DRESS

Many women prefer the house dress to a kimono and here is an excellent pattern for making such a garment. This dress closes at the left side of the front and is made with short sleeves and a low round neck. The skirt is cut in seven gores.

The pattern, No. 5523, is cut in sizes 32 to 44 inches bust measure. Medium size requires 4⅛ yards of 44-inch material.

Price of pattern, 15 cents.

6673---LADY'S COAT

This coat is in the new Balmacaan style. It is loose and flares nicely at the lower edges. The sleeves are in the raglan style, extending to the neck-edge. Here there is a small collar joining notched revers in the regulation coat fashion. These coats are made of rough fabrics, tweeds, homespuns, basket weaves and the like which are found in similar effect in both woolens and cottons.

The pattern, No. 6673, is cut in sizes 34 to 48 inches bust measure. Medium size requires 3⅜ yards of 50-inch material.

Price of pattern, 15 cents.

THIS WASHER MUST PAY FOR ITSELF

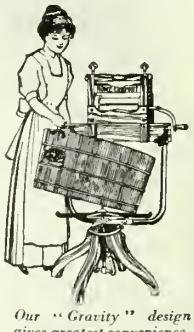
A MAN tried to sell me a horse once. He said it was a fine horse and had nothing the matter with it. I wanted a fine horse, but, I didn't know anything about horses much. And I didn't know the man very well either.

So I told him I wanted to try the horse for a month. He said "All right, but pay me first, and I'll give you back your money if the horse isn't alright."

Well, I didn't like that. I was afraid the horse wasn't "alright" and that I might have to whistle for my money if I once parted with it. So I didn't buy the horse, although I wanted it badly. Now this set me thinking.

You see I make Washing Machines—the "1900 Gravity" Washer.

And I said to myself, lots of people may think about my Washing Machine as I thought about the horse, and about the man who owned it.



Our "Gravity" design gives greatest convenience, as well as ease of operation with quick and thorough work. Do not overlook the detachable tub feature.

But I'd never know, because they wouldn't write and tell me. You see, I sell my Washing Machines by mail. I have sold over half a million that way. So, thought I, it is only fair enough to let people try my Washing Machines for a month, *before they pay for them*, just as I wanted to try the horse.

Now, I know what our "1900 Gravity" Washer will do. I know it will wash the clothes, without wearing or tearing them, in less than half the time they can be washed by hand or by any other machine.

I know it will wash a tub full of very dirty clothes in Six minutes. I know no other machine ever invented can do that without wearing the clothes. Our "1900 Gravity" Washer does the work so easy that a child can run it almost as well as a strong woman, and it don't wear the clothes, fray the edges nor break buttons, the way all other machines do.

It just drives soapy water clear through the fibres of the clothes like a force pump might.

So, said I to myself, I will do with my "1900 Gravity" Washer what I wanted the man to do with the horse. Only I won't wait for people to ask me. I'll offer first, and I'll make good the offer every time.

Let me send you a "1900 Gravity" Washer on a month's free trial. I'll pay the freight out of my own pocket, and if you don't want the machine after you've used it a month, I'll take it back and pay the freight, too. Surely that is fair enough, isn't it.

Doesn't it prove that the "1900 Gravity" Washer must be all that I say it is?

And you can pay me out of what it saves for you. It will save its whole cost in a few months in wear and tear on the clothes alone. And then it will save 50 to 75 cents a week over that on washwoman's wages. If you keep the machine after the month's trial, I'll let you pay for it out of what it saves you. If it saves you 60 cents a week, send me 50c a week till paid for. I'll take that cheerfully, and I'll wait for my money until the machine itself earns the balance.

Drop me a line to-day, and let me send you a book about the "1900 Gravity" Washer that washes clothes in six minutes.

Address me personally, S. N. MORRIS, Manager, **1900 Washer Co., 357 Yonge St., Toronto, Ont.**

No Hair On a Pretty Face—

AN unsightly growth of hair on face, neck or arms is easily removed. Send for our

FREE TRIAL TREATMENT

a preparation by Dr. Simon, Paris, France.

RAZORINE

absolutely removes superfluous hair, toughest beard, totally destroying roots without injury to the most delicate skin. Makes the skin soft and velvety. We offer $50.00 for its failure. Send 10c to cover cost of mailing and get sample. Prove its value by personal test. Price of complete treatment, $1.00. Address Cooper & Co., Dept. 17, No. 219 Commissioners Street, Montreal.

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received highest awards at world's expositions; cooks a whole meal over one burner without mingling flavors; no steam or odor; whistles for water when needed. Saves labor, food and fuel. Send for special 30 days' parcels post offer of 50 fast-selling household specialties direct from factory at wholesale prices to you.

Peerless Cooker and Specialty Co.

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AGENTS WANTED

Buy St. Lawrence Sugar in original packages. Untouched from refinery to your cupboard, you are sure of sugar absolutely free from contamination or impurities of any kind.

St. Lawrence granulated white pure cane sugar is packed in three sizes of grain—fine, medium and coarse, in 100 lb., 25 lb. and 20 lb. sealed bags and 5 lb. and 2 lb. cartons.

All first class dealers can supply it so insist upon having St. Lawrence Sugar.

ST. LAWRENCE SUGAR REFINERIES LIMITED, MONTREAL.

25-10-13

6643---LADY'S WAIST

The plain waist is so much worn that it is all but indispensable. In this model we have a small front yoke formed by extending the back of the waist over the shoulder. The sleeve is set in very low on the arm and the closing is in front. The waist is finished with a short, circular peplum. Voile, chiffon, batiste and the like are used for these waists.

Price of pattern, 15 cents.

REFINED SOAP
for Refined People

Unsurpassed for beauty and fragrance, having the odor of the natural Violet flower.

Is composed of the very finest materials obtainable, scientifically and chemically combined, thus insuring the user of an absolutely pure soap.

When used for the toilet the whole room will become permeated with the odor characteristic only of the natural Violet flower.

If your dealer cannot supply you write us direct, Dept. M.

Send 10c for single cake, or 25c for box of 3 cakes.

Manufactured by

Dominion Soap Co., Limited

Hamilton, Canada

NAME .....

ADDRESS .....

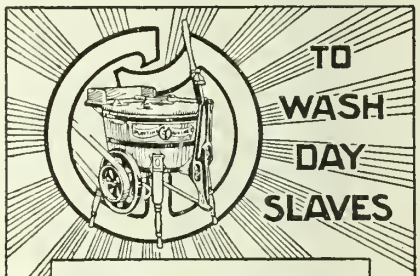
6644---LADY'S DRESSING SACK

In this pretty model we have the body and half of the sleeve in one, a single seam running down from the neck-edge to the wrist along the outer arm. The neck is trimmed with a handsome collar and a cuff to correspond completes the sleeve.

Price of pattern 15 cents.

120

Cheese Made with Windsor Cheese Salt brings best Prices



Women were slaves once. Some of them have never gotten over it, particularly on wash day.

If YOU are still bound and shackled by wash day slavery, investigate the "Playtime" Washer. Do not confuse it with the old-fashioned Washers that you have heard of. As a power machine it is specially adapted for the country where gas, gasoline, steam engine or windmill power is available.

See the "Playtime" at your dealer's or send to us for full information.

CUMMER-DOWSWELL, Ltd.

206 Hamilton, Ontario

It—must—be—Bovril

You can be sure of being nourished if you take Bovril. Partly by virtue of its own food value, partly through its unique powers of assisting assimilation of other foods, Bovril has been proved to produce an increase in flesh, bone and muscle equal to 10 to 20 times the amount of Bovril taken. But *it-must-be-Bovril.*

Of all stores, etc., at

1-oz., **25c.**; 2-oz., **40c.**; 4-oz., **70c.**; 8.oz., **$1.30**; 16-oz., **$2.25.**

Bovril Cordial, large, **$1.25**; 5-oz., **40c.**

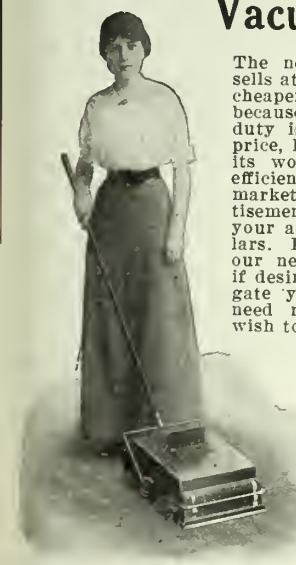
16-oz. Johnston's Fluid Beef (Vimbos), **$1.20.**

S.H.B.

Housecleaning

Every house requires constant cleaning; every housekeeper knows how hard it is to accomplish. "Dusting"—scattering the dust and dirt does not clean your house. The logical, easiest and, in the end, the cheapest way is to use a

Cadillac Hand Vacuum Cleaner



The new model (illustrated) sells at a very moderate price; cheaper than other machines because made in Canada and duty is thus saved. Its low price, however, does not affect its work, as it is the most efficient hand cleaner on the market. Clip out this advertisement and send to us with your address for full particulars. FREE demonstration at our nearest agent's arranged if desired. This will not obligate you in any way. You need not buy if you don't wish to.

Clements Mfg. Co., Ltd.
78 Duchess St.
Toronto Ont.

Montreal Agents: Diamond Light & Heating Co., Ltd., 308 Craig St. West.

You Can Increase Your Salary

By acting as our special representative in your spare time. We have hundreds of energetic young men making big money getting subscriptions for MacLean's Magazine.

Write us for particulars

MACLEAN PUBLISHING COMPANY
143-153 University Ave. Toronto

6672---LADY'S WAIST

This model shows one of the new type shirt waists. It has a closing diagonally arranged in front and a handsome collar, with sleeves, long or short, set in at the regulation armhole. If the sleeves be shortened to the elbow a very pretty and novel cuff arrangement is provided as shown. These waists are made of crepe de chine, messaline, taffetas, cotton and silk novelties of many kinds.

This pattern can be obtained by send- 15 cents to the office of this paper.

6657---CHILD'S ROMPERS

These are in the new and popular Dutch style. The blouse has quite a long opening in front, through which a shield is visible, the outside hooking to it. A small collar trims the neck, and cuffs finish the sleeves. The bloomers are in one piece closing at the sides. These suits usually have white for the blouse and a color for the bloomers.

Price of pattern, 10 cents.

PROMOTE A CLEAR SKIN

With

CUTICURA SOAP

And Cuticura Ointment. No other emollients are so sure to afford complete satisfaction to all who rely upon them for a clear skin, clean scalp, good hair, and soft, white hands.

Cuticura Soap and Ointment sold throughout the world. Liberal sample of each mailed free, with 32-p. book. Address "Cuticura," Dept. 133, Boston, Mass., U.S.A.

Waists at half price

Here is an exceptional offer to introduce our SILCOTTE waist factory to the Canadian public direct.

You can get highest quality $7.00 waists for $3.49 each.

How to Get It

Simply enclose the names of five of your friends who might be interested, together with your size and $3.49, and we will send you by return express one of these elegant $7.00 waists, made of our novelty "SILCOTTE" in the latest popular styles.

You take no risk. Your money will be promptly refunded if not entirely satisfactory.

GUARANTEE WAIST CO.
Dept. F1, 26 Victoria Square
MONTREAL

GOOD NEWS— Here are just a few letters selected from many to show YOU that Dr. E. E. Burnside's

PURIFICO FOR TUMOR GOITRE and all blood diseases is supreme

Please regard these letters as personal, for each contains a message for **you** and **every word is true.**

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Sackville, N.B.

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Sarnia, Ont.

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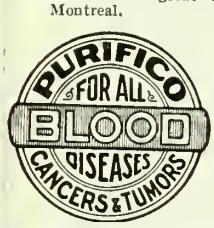

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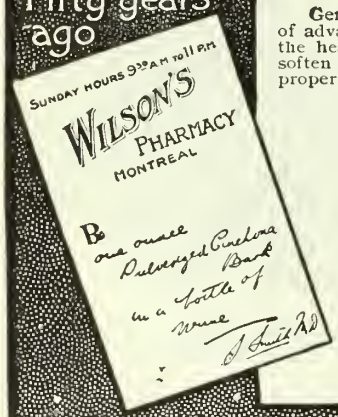

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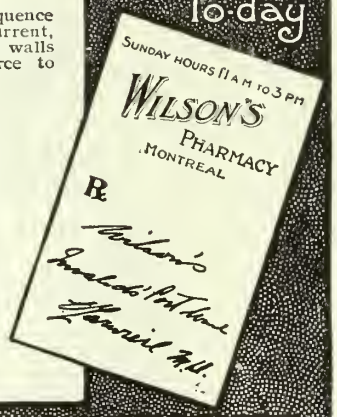

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Making a Fete of Wash Day

Continued from Page 52.

using ordinary flat irons, by all means have at least six instead of three. You need not keep the fire so hot and will consequently save fuel and then you can iron so much more quickly with hot irons. Fortunately we do not use starch so freely as we used to for starched things are harder and slower to iron. On the other hand unstarched things also soil more quickly as starch makes material shed the dust.

And what are we going to iron? If we have a mangle, some weeks there need be absolutely no ironing. The worst thing about a mangle besides the expense, is where to keep it in a small house. Mangles require two to use them, but still save time. Table linen should be put through twice. Once when damp for smoothness, once when perfectly dry for gloss. Sheets, pillow-cases, towels, and so on need only go through once. Fortunately to-day we can get material for underwear and dresses which really looks better unironed. In dresses it is better to press the hem on the wrong side. Even if we have not this crinkled cloth for underwear, the busy woman need not iron her work underwear. Some one has aptly said: "Clean clothes are a necessity—ironed clothes a luxury." One would hate to put on an embroidered underwaist unironed, but—that's a luxury. If you have not a mangle and if there are two to work at it you can put the tea towels, other towels, table napkins, even the sheets if carefully folded, through the wringer, but be sure to fold as much as possible without hard ridges and watch that your wringer is screwed to suit the clothes or you may harm your wringer. The hems of everyday sheets are all you need to iron. Fold them carefully, iron the hems by partly unfolding, and iron the final fold for neatness in putting away. When you get your dresses and underwear made just think of the ironing and choose your patterns accordingly. If you do these clothes in less time, why then you will have both the energy and desire to put work on your embroidered clothes and on your table linen and perhaps on some starched or semi-starched frocks, but don't wear out your life with ironing less important things. After all there is only one thing of intrinsic value in your housekeeping and that is to keep yourself and those in your care in the best of health, and so capable of the greatest results. For one woman who is over-careless of her family's appearance I think there are ten over-zealous on washing and ironing day, and who suffer the rest of the week with a tired back or worse.

To sum up—have the best washer you can afford—a power one if you can, one which is not too hard to run and one which can be used for flannels, too. Have good light tubs, lots of clean clothes pins and a boiler which won't rust and ruin your clothes. Have a good wringer. Only

the best wear well, but take proper care of it, always unscrewing the tension before putting away. Coal oil is excellent for cleaning it, but never leave the oil in the rollers as it will eat them. At the same time nothing but coal oil cleans them readily. Have plenty of good soap and have some melted. Have your dinner planned the day before and if possible ready to be cooked. As you must have a hot fire for the boiler, and hot water, plan to cook your meat, potatoes, and pudding in the oven. Don't have a cold dinner as you really need a good square meal for wash-day. And last and not least have a man or boy, if at all possible, to turn the machine and the wringer, to fill the tubs and the boiler and to even take the clothes from the boiler, and you will possibly avoid a doctor's bill in the future, to set strains right, not to mention in the meantime that you will do your wash in half the time and that you will lose your dread of wash-day, and will even learn to like it.

Making Alfalfa Hay

Continued from Page 37.

falfa plants are dead and rotted down from the crowns three or four inches.

Break with a single-furrow walking wheeled plow, with a sharp share using three heavy horses. There will be found some strong roots that are not dead and may throw the plow out. A file in the field to sharpen the share occasionally is a good thing. The plowing may look a little rough from many long roots that may have pulled up, but when worked up and planted to corn, it will likely give the greatest crop of corn ever grown upon the farm, owing to being made in such fine physical condition from the breaking up of the soil to such a great depth by the action of the roots and the large amount of fertility that has been gathered from the atmosphere and the decayed vegetable matter left in the soil.

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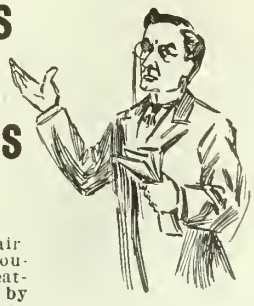

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Mr. Wiggins was cured for $4.50.

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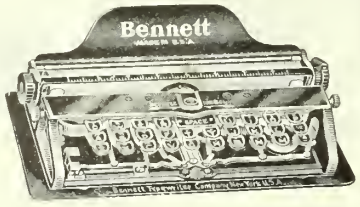

Fitting Up a Living Room for Steady Use

Suggestions for Buying New Furnishings or Making-over What You Have

By GENEVIEVE

FURNISHING a room to live in is one of the home-making problems requiring an appreciation for utility, beauty and common sense. The room will be used every day by the whole family so it should be free from things perishable or hard to clean; it is the place in the house built for rest and recreation so it should be comfortable and charming—there is no use trying to get around that word by saying pleasing or cheerful or some thing equally mild. A room in as constant use as this has a right to be strikingly good-looking and when you are fitting it up you might as well make a master job of it.

The Wall as a Background

The wall treatment will depend largely on the windows, their number, size and position and the direction they face. A north room requires warmer colors than one facing south; if the wall spaces are much broken with scattered windows, large designs in paper or stenciling do not look well; and if there is a great deal of light flooding into the room, dull shades may be used to absorb it, and tone down the glare. As a rule the plainer our walls are without being dead, the longer we will like them, and the better the furniture will look. A wall is only a background so far as appearance goes, anyway. Plain cork velours or oatmeal paper in gilt paneling and drop ceiling in a lighter shade, if the room is high enough to stand a drop ceiling, makes a lasting decoration.

Colors for Light and Dark Rooms

For a dark north room, yellow and golden brown are good, making the most of every ray of sunlight that comes in. Golden brown burlap coming up to the wainscot with the rest of the wall and the ceiling covered with buff paper or deep cream with a little gilt, gives a cheerful sunny effect. Where the room is well lighted quieter browns, and greens, especially bronze greens and olives may be used, remembering always to have the ceiling lighter than the walls. A cream ceiling will go with almost any wall. Blues and reds are well to give zest to a decoration, but their effect is lost if they are used over large areas. Bright, decided little touches of crimson, old blue or peacock blue in rugs or curtains have a very catchy effect without being noticeable. For a room where the light pours in glaringly a cool grey makes about the best wall treatment, and may be very effective with trimmings in mulberry or autumn colors. A grey room doesn't sound very inviting, but a light grey paper with silver bars or stripes and border of fruit or stenciled design in mulberry color, or a heavy wreath of autumn foliage, gives a quiet but cheery atmosphere to a room that would otherwise be almost gaudy. Grey blues, or greens might be used, but in choosing dull colors care must be taken not to get a shade either too cold or depressing.

Buying the Floor Covering

After the walls, the next question is what to do about the floors. A large rug that can be taken up easily and cleaned is, of course, preferable to a tacked-down carpet, but even if you are so fortunate as to have the most handsome hardwood floors it is a poor plan to have them bare. The noise of walking on uncovered floors and stair steps soon becomes a bit wearing to the nerves, as well as tiresome to the feet. In a house where the floor covering is likely to get a great deal of hard wear a good solid linoleum with a few small rugs is most serviceable and easily cleaned. In any case the floor should be ready for use when the young people entertain their friends.

In buying a rug it is well to avoid large patterns or plain spaces. The former seem to keep clamoring for attention, or like showy wallpapers, get you counting the scrolls and measuring the distances between them until you can still see them with your eyes closed; while a covering with large spaces shows every particle of dust. Perhaps the most satisfactory rug is a good body Brussels with an all-over pattern in a mixture of colors that will harmonize with a variety of furnishings. Tapestry Brussels is cheap, but does not last well as the threads are merely hooked into the surface and soon wear off in places. Wilton velvet rugs are very rich and durable and are preferable to Axminster, which although it is thick and luxurious, soon mats down and loses nap at every sweeping.

Avoid Bow-legged, Dragon-carved Furniture

The greatest trouble with our living-room furniture is that we generally have too much of it, and that some of the pieces are likely to be unsteady on their legs. This is where the beauty of mission furniture comes in. Strongly built and plain, it is intended for use, giving an air of solidity and dignity almost impossible with the highly polished, dragon-carved, bow-legged, cane-bottomed things. A mission table, mission chairs and davenport with leatherette upholstering, and a few light, strong, made-to-sit-in rattan chairs should be attractive and

durable enough for any home. Leatherette is no papery imitation of leather, but a strong, good-looking pebbled material that wears like iron.

Perhaps it is carrying the mission idea too far to say that it makes the best kind of case for an upright piano. Anyway a piano is a rather large investment and the family should have just exactly what they want in every detail. Apart from appearance the mission case has this advantage, that it will not scratch like polished wood.

Work for the Window Artist

The atmosphere of a room depends very largely upon its window treatment. Especially if your windows are in groups, you have wonderful possibilities in this direction. Instead of elaborate white lace curtains reaching to the floor, try sash curtains of heavy cream or ecru net coming just to the window sill, and over these, pushed well back on a rod to the sides of the window or groups of windows, have narrow curtains of colored silk, silkoline, or cotton, but be sure it is washable. Usually a short frill of the material runs across the top of the window as well. These shadow curtains are not used merely for appearance. On bright days they may be drawn together to tone down the glare without shutting out the sunlight.

Making the Parlor Into a Living Room

But it isn't a hard problem to furnish a room as you like when you are getting everything new. The difficulty is when you have a parlor with a well preserved plush parlor suite, a carpet nearly as good as new, and delicate cushions and bric-a-brac—and you want to fix up this room to use every day. These parlors are all too common, beautiful rooms they may be, but assuredly they were never intended for hard, steady use. If you want to make such a room into a real living room, clear it all out and repaper the walls if necessary, but they won't likely need it the first year. The carpet can be sent away to be made into a rug to come within about eighteen inches of the wall all around, and you will have pieces for a few small rugs left over. Likely the floor will need some treatment where it is uncovered. Several coverings are sold at the furniture stores for this purpose in plain or wood grained linoleums, cork, etc., or after a little practice it is not hard to fill the cracks and paint, grain and varnish the floor yourself. The velvet parlor suite would soon suffer from dust and wear if left uncovered, so it is worth while to make a slip of denim, chintz, or cretonne for each piece. The perishable cushions can go into washable pillow covers of gingham or chintz to match the chairs and lounge. You will discover numberless ways of making over your parlor if you really want it to be a room to live in, not a vault where we put our best things and open up for airing only when visitors are expected.

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A Valuable By-Product

On Friday in the School Room, the Real Boy or Girl Opens to the Sun

By MURIEL FOLLINSBEE

THERE is an educational value in the Friday afternoon exercises in our public schools, that is too often overlooked by the teacher and the too theoretical curricula makers of our education departments.

The real meaning of education is drawing out, and only when the real life of the student asserts itself in its own spontaneous way, is there any real foundation for the teacher to work upon. The directing genius of the careful teacher, here observes the pupil's chief needs and "wisely bends the willow to the sun."

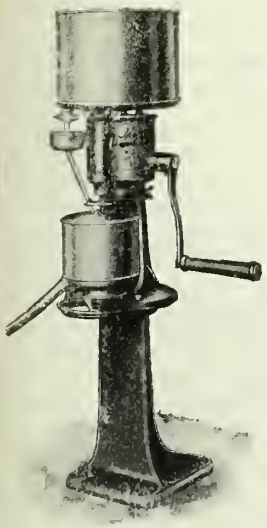
And on Friday afternoon, the opportunity for originality in the development of better things should be given every pupil. We are concerned about too many things. Our hours are mapped out and lived up to under a rigid system, often stifling to personal development. But Friday afternoon should be one of relaxation from the feeling that discipline gives, for the untying of diffidence, and for the awakening of the individual boy or girl to a sense of his latent possibilities. The joy of doing things is a great moulder of character. The sense of accomplishing things carries a mighty impulse for good in it. The wise teacher recognizes this and sees in the Friday afternoon literary society, the most valuable hours of school life.

Still, few teachers utilize this time. They throw away the kernel to scratch among the shells of pedagogy. And this is why I am constrained to write for the advantage of my fellow school teachers everywhere. In fact I feel that much worse time might be spent in this afternoon, than reading from "Farmer's Magazine," the stories of agricultural successes and endeavors along lines where enthusiasm and a love of doing things, have made possible the successful reclamation of a cedar swamp soil or have built a farm home perfectly planned and harmonious throughout, for the elevation of country life. For there is no better life than that on our good farm acres and there is no better joy than that that fairly blossoms forth from the growing things by stream and fence-row.

A Victrola in the School

The Friday afternoon programme to be both delightful and beneficial must be varied in its nature. After studiously applying himself to master the art of public speaking, the child needs a little music, laughter, and song to relieve the brain-tension. All children enjoy the music of a good victrola, and as they listen to the sweet voices of Melba or

Melotte



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H. CLAY GLOVER, D. V. S.
118 W. 31st St., N.Y.

Tetrazzini, every sound in the room is hushed and the child-soul is far away in a heaven of its own making. The teacher leads the child to see that what is possible for others to do, may also be possible for him and that, when he sings himself, if he wishes to delight his audience, he must sing with "heart and voice." It is wonderful the way the children enter into the spirit of pretty songs and lullabies.

Humorous songs must be introduced to call forth the free spontaneous laughter of the child, and the pathetic songs are also necessary to teach sympathy for the sorrows of others. The effect of the musical programme is uplifting, inducing in the child-mind an appreciation of the æsthetic and a desire to express as much of it as possible in his own correct pronunciation, and public speeches. Many other features of educational value can be aided by the phonograph.

Lantern and Slides

Another good thing that should be coming into more general adoption by school teachers throughout the country, is the use of the lantern and slides to illustrate the Canadian flowers, grains, and roots, house decoration, building construction and the hundred other things with which country life is teeming. The film ought to be in every school. The payment of $1,000 a year to the country teacher should be the minimum salary. The noblest work our country is called upon to perform is to give a fighting chance to every boy and girl by and through his early training.

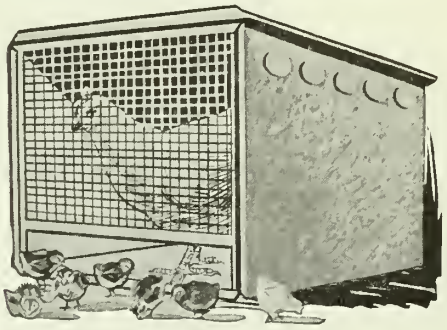
Most amazing of all, to both spectators and performers, is the introduction of amateur drama into the afternoon's programme "Little Boy Blue" is an admirable lesson for dramatization. The boy chosen to be the farmer assumes a very important and business-like air as he engages Boy Blue to look after his sheep and cows. The children chosen to be the sheep nibble away at the grass in the meadow, with hilarious delight, and those who represent the cows, very slowly and complacently find their way into the corn-field. When Boy Blue awakes from sleep, a very real look of terror spreads over his face and he hastily blows his horn.

The dramatization of this lesson impresses the story on the mind of the child and he retains a vivid mental picture of all the proceedings. More than that, he unconsciously realizes the disastrous results following upon the neglect of duty and he thinks that if he had been entrusted with the care of the cows and sheep, he would not have fallen asleep at his post.

In the advanced classes it is well to have debates on special occasions. The pupil must seek information on his subject when and where he can and must develop it in such a way as to emphasize his argument and to make very clear to his audience the points which he wishes to establish.

In the debate the debater must confer with his collegaues and they must jointly agree as to which points are to

Tri-Angle Chicken Coop



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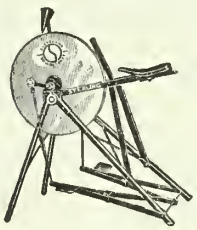

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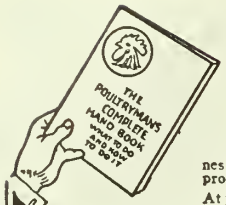

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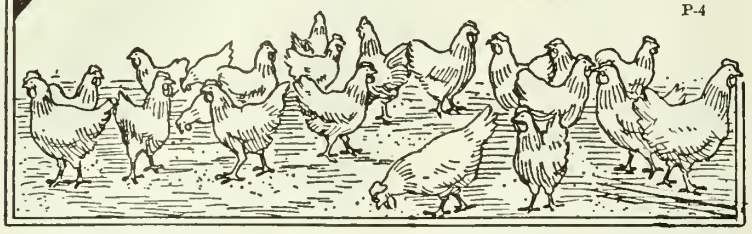
P-4



SYNOPSIS OF CANADIAN NORTH-WEST LAND REGULATIONS

THE sole head of a family, or any male over 18 years old, may homestead a quarter-section of available Dominion Land in Manitoba, Saskatchewan or Alberta. The applicant must appear in person at the Dominion Lands Agency or Sub-Agency for the District. Entry by proxy may be made at the office of any Local Agent of Dominion Lands (not sub-agent), on certain conditions.

Duties—Six months' residence upon and cultivation of the land in each of three years. A homesteader may live within nine miles of his homestead on a farm of at least 80 acres, on certain conditions. A habitable house is required in every case, except when residence is performed in the vicinity.

In certain districts a homesteader in good standing may pre-empt a quarter-section alongside his homestead. Price $3.00 per acre.

Duties—Six months' residence in each of six years from date of homestead entry (including the time required to earn homestead patent) and 50 acres extra cultivation.

A homesteader who has exhausted his homestead right and cannot obtain a pre-emption may take a purchased homestead in certain districts. Price $3 per acre.

Duties—Must reside six months in each of three years, cultivate 50 acres and erect a house worth $300.

The area of cultivation is subject to reduction in case of rough, scrubby, or stony land.

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Deputy of the Minister of the Interior.

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be illustrated by each one. This practice of meeting together and considering the subject from all standpoints develops in the child, a certain amount of tact, good-will and good-fellowship. He begins to feel the truth of that old adage "United, we stand." As he learns now to be in harmony with his colleagues, in the debate, so he learns in after-life to work shoulder to shoulder with those around him.

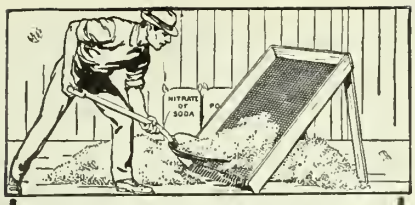
Excitement is high when the judges announce their decision of the debate. The children resemble nothing so much as the audience in a political meeting where the election returns are being read aloud. They listen so eagerly to hear if theirs is the winning side and clap their hands in glee if they are successful. Then the teacher intervenes and explains to them that if they wish to be useful in after-life, they must be good losers, and they must always persevere, determining to win through failure after failure. She tries to impress upon them, that the real winner in every case must be simply the one who does his best.

Visitors Judge Debates

It is customary to invite visitors to act as judges for the debates and they are afterwards asked to entertain and edify the class by short addresses. The pupils are taught to give their very best attention to the speaker, not merely as a matter of courtesy, but that they may understand his thought and thereby derive enlightenment for themselves. Thus they learn the invaluable lesson of concentration. To make this act of concentration attractive to the child, the teacher informs the class beforehand that she is going to ask a few questions afterwards to see which pupil has been listening most attentively.

Most children are more impressed by the personality of the speaker than by his remarks. It is the occasion of much mirth and merriment when one of the speakers asks the members of the class to criticize him with regard to his oratorical attainments. Very politely and frankly they respond. This practice encourages the child to be independent in thought and action and to decide for himself just what constitutes excellent public speaking. He sees the importance of a pleasant agreeable manner, and the absolute necessity of having something vital to say, something that will stimulate and encourage the listeners. But most of all, there develops a desire in the child's mind to be a great speaker himself and to be able to charm, instruct and inspire his audience.

In conclusion, we might say, that the setting apart of the Friday afternoon as a time of recreation has undoubtedly an influence for good on the life of the child. He first learns to be polite, attentive and well-behaved and these characteristics will win many friends for him in after-life. He also learns to express his thoughts correctly and clearly, without diffidence and without hesitation, and this will gain him the respect of his fellow-men. And more than all, he learns the joy of work.



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"Home Mixing" is a book to help you increase your yields. Send your address to me on a postal card.

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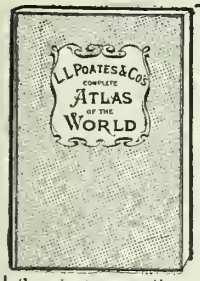

KNOW CANADA

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Farm Incomes for Women and Children

Flowers, Eggs, and Broilers Furnish Pin-Money and the Living for a Family

By ICH DIEN

TWO country boys, aged nine and ten years, whose father is a market gardener went into sweet pea growing in the spring. They bought the choicest mixed seed (The Spencer collection is excellent) and planted three or four rows right across a field alongside a strip of land that was to be used for vegetables. They got the seed in early, the soil was rich and well drained and the seed germinated well. When the plants appeared the youngsters kept out every weed and mulched the ground wherever it needed it. I saw them in bloom and they looked a veritable rainbow across the land.

The lads plucked the flowers, and tied them into small bouquets. These were tastily displayed in baskets placed on the top of their father's load of vegetables and they sold themselves. One of the boys accompanied the father on the trips. A small nosegay sold for five cents. The market was a summer resort. Often the ladies there gave social functions, and would order dozens of bouquets ahead. The flowers bloomed so profusely, due largely, no doubt, to their being picked every day that the lads could supply any reasonable demand, and they showed me with some pride, their hammock, lawn mower and other things that they had bought with the money.

Another little lad who lived in town, grew asters. One morning on the way to take my music lesson I met him standing on the corner, with his load of flowers, waiting for the trolley. He had a couple of 12-quart baskets just heaped up with asters. I bought a bouquet to take to my teacher. She opened the bouquet and it had been skilfully prepared. First the flowers had been arranged, securely tied and the stems trimmed. Then a wet strip of cotton had been wrapped around them and over this several thicknesses of newspaper had been wrapped and securely tied so that the nosegay was prepared to stand several hours' journey without any signs of wilting. The boy said that he could sell more than he was able to raise. His flowers were of all colors and each bouquet was arranged with something green as scented geranium, ribbon grass, ferns, or baby's breath. He sold them for five cents the bouquet. The Royal mixture is the best that I know in these. The petals are long and well curled and twisted. The plants branch well and bloom for a long time.

Chickens that Bought a Horse and Supplied Living Expenses

Mrs. Bee began the chicken business in her own yard. They owned an acre of ground on the outskirts of a large city. The lot contained the house and a fine large lawn in front and a big barn in the rear. To start she bought an incubator, and eggs of White Leghorn stock to fill it several times. She raised seven hundred chicks the first year. While the eggs were hatching, pens, runs and brooders were being prepared. She arranged for early hatching so that the first hatched pullets would begin to lay by the last of July, the next batch by the middle of August, etc.

She fed wheat, cracked corn, and scraps, chopped grass, ground bone, grit, table refuse and garden truck. In winter oats were sprouted for the birds and they were fed the surplus milk. Clean fresh water was always before the chicks. In winter it was warmed. Everything was done to bring the chicks to maturity early.

A feeding room was provided. This had a ground floor covered with sand. On

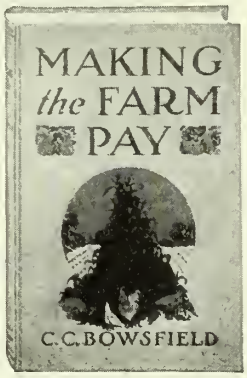
The Book Department

For Farmers, Gardeners and Fruit Growers, Stock Raisers, Florists

Whenever you want a book on any subject, write the Book Department of Farmer's Magazine

MAKING THE FARM PAY

By C. C. BOWSFIELD



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Of immense value to a farmer in any part of America.—*Portland (Ore.) Journal.*

The book will be of immense value to every farmer, large and small.—*Financial Post of Canada.*

Full of sensible advice. The author avoids exaggeration and shows he has given the subject his best though. The book is cheap only in price—in that it certainly is cheap.—*Jacksonville, Fla., Times Union.*

An important, practical book, treating the subject with great care.—*Boston Transcript.*

Packed with ideas and suggestions for the farmer. Clear and helpful.—*Montreal Star.*

An admirable text-book because it is the farmer's best friend. It will make any farmer make his farm pay.—*The Journal of Education.*

Full of useful information, with every phase of farming discussed with commendable clearness.—*Mail and Empire, Toronto.*

The author has a large view of country life. Practical and sensible.—*The Publisher's Circular, London, England.*

Will be a help to farmers everywhere.—*Dairy Record, St. Paul, Minn.*

An immense amount of information for those who intend to take up farming as well as for the farmer.—*The American Cultivator, Boston.*

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THE FARMER'S MAGAZINE

Montreal Toronto Winnipeg Vancouver

BOOK DEPARTMENT

143-153 University Avenue, Toronto

this was placed a deep layer (6 or 7 inches) of chaff and cut straw' into which was thrown at feeding time a mixed ration as mentioned in the preceding paragraph. The object of this method, was, of course, to lessen labor and provide exercise for the birds.

As soon as the pullets and cockerels could be distinguished they were separated.

She continued feeding carefully so that at the age of 10 or 11 weeks these weighed from 1½ to 2 pounds each live weight. These brought 75 cents a pair dressed and delivered at one of the high-class hotels. As the birds became heavier and tipped the scale at three pounds, and later four and five, the price kept pace with the weight.

As it drew near the time for the pullets to begin laying they were divided again, those only being spared that would lay soon. This is how the layers were discovered. The pelvis is the basin or bony cavity that forms the lower part of the abdomen. Two pelvic bones, one on either side of the egg vent, may easily be found by examination. If it is found that these two bones are spread well apart and the bird comb is a bright red, spare that pullet for she will soon be laying. These selected pullets were then given every care and attention. These early eggs brought fancy prices, because she marketed every day and the eggs were fresh, having the "bloom" on.

Mrs. Bee lives a block and a half from the car line that takes her in ten minutes to the city. She and her boy carried the fowls and eggs in baskets and she told me that it was scarcely believable the amount even a small basket of fowls or eggs netted. The third year she had three incubators and incubated eggs for her neighbors at 2 cents each. This yielded her a handsome profit with very little outlay.

This woman is of the opinion that in poultry for profit, feeding is everything. She studied papers and magazines, consulted with others in the poultry business and kept on experimenting while she worked till she has feeding down to a science. She always has a good garden and feeds a lot of green stuff. The chickens furnish the living for the family; supply the best kind of meat, and they always have eggs when it is worth while to have them, that is in winter.

The manure from the roosts is applied to the garden. It is one of the very best fertilizers, rich in the very substances that are most expensive when it comes to buying artificial fertilizer.

A small but well cultivated garden in this connection is another source of income. Early potatoes, beans, peas and cucumbers are raised and gotten to market a week or so before other produce is ready. The money is made by the early sales.

A year and a half ago she bought a horse and wagon with part of the egg money and now that they have better facilities for marketing, more produce is carried.

Digging Saskachewan Gold

Continued from Page 26.

varieties of wheat with the days they took to mature and the yield per acre.

Variety.	Days to ripen.	Yield per acre.
Marquis	131	35
Red Fife	137	28
Huron	132	26
Alpha	131	24
Prelude	118	10

While these yields are not high these tests have a great value to the local farmer. At Rosthern Station, north of Saskatoon, Marquis yielded 54 bushels, Red Fife 54 bushels, and Huron 45 bushels.

Out in the Scott fields, there were also some eight-acre plots sown to wheat which gave a much better showing. One on corn stubble gave over 52 bushels to the acre yield. One remarkable feature of the situation is, that the yield in every case from corn stubble was larger than from summer-fallow. This is a good boost for corn, silos, dairy cattle and beef-making, so that the future may soon

Two Norwegian settlers sweating good nature and broken English shovelled their carloads of wheat from the wagons.

see bigger shipments of these products, to the big Eastern consuming centres.

Other Grains Tested

But for big yields to the acre, the palm has to go to oats. It certainly does one's heart good to visit the oat fields out on these sunny acres. Giant heads of plump kernels, supported by equally as stout stalks, and standing as thick as a vigorous nature can force its way upwards, give to the eye when surveying a big field of waving grain, one of the pleasures of existence.

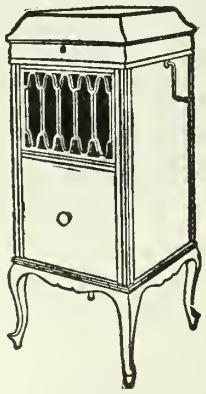
Several varieties of oats were tested last year. They were sown at the rate of two and one-quarter bushels to the acre. Victory led in yields on the plots, giving 107 bushels to the acre. Other varieties were the Twentieth Century, Abundance, Banner, Gold Rain, Ligowo, etc. In many parts the Banner has been found to be a most dependable variety.

Big oat-yield stories are told in Northern Alberta, the Peace River country, and in this district. Before me as I write is a sample of oats sent me by a newspaper friend, who has just moved into the Peace River country. He says that this was a sample of oats which threshed 101 bushels from a single load.

Have you been waiting for an Edison *Disc* Phonograph?

The man who made sound reproduction possible—Thomas A. Edison—has now produced a Phonograph that plays Disc Records. He has put into this new instrument all that 35 years of study in sound reproduction has taught him.

The result is a Phonograph of rich, mellow tones and lifelike fidelity. If you want real music; if you want *permanency* in your reproducing point; if you want records that can be played for years without injury; if you want a cabinet that is beautifully designed; if you want every improvement and refinement that Mr. Edison has been able to work out—then you want an Edison Disc Phonograph. There is a model at *your* price. There is a demonstration at your service any time.



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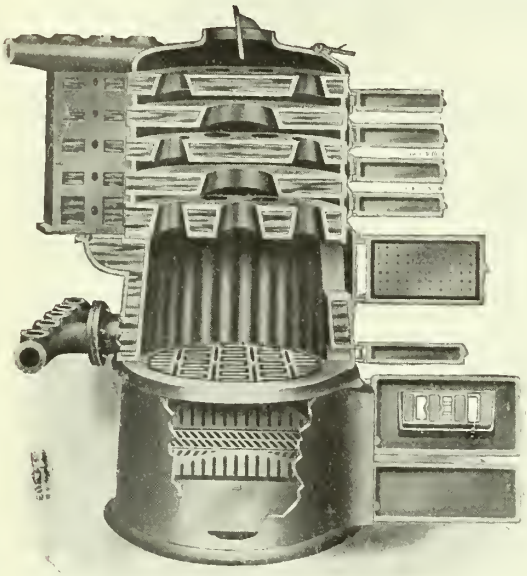

THE new model 1913-1914 "Sovereign" hot water boiler has a double efficiency. It is practically two boilers in one: a hard coal burner, and a soft coal or wood burner.

When the winter weather is mild and the smaller of "twin boilers" would be sufficient to heat a house, the new model "Sovereign" may be put on soft fuel, with no necessity to waste fuel keeping alive a heavy fire of hard coal.

The reason the old-style hot water boilers will burn hard coal only is because the flues—the vents in the boiler sections through which the heat fumes pass into the chimney-pipe—are made too narrow to carry away the dense smoke that arises from soft coal and free-burning fuel.

The new model "Sovereign" is an improvement upon the old standard designs.

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By VICTOR LOUGHEED

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THE MACLEAN PUBLISHING COMPANY, LIMITED
TECHNICAL BOOK DEPT. 143-153 UNIVERSITY AVENUE, TORONTO

So here in the good soil of Saskatchewan oat gold is being assayed in the Experimental Station at Scott in the Tramping Lake country. In the previous year, White Giant was an oat that gave great promise, but the hail storms of that celebrated year left very little for the threshing machine to do.

O.A.C. No. 21, barley is making good out here, while Black Japan and Manchurian show handsome results.

Golden Vine peas have made a creditable showing. Other varieties are also being tried out. Canadian Beauties, so far, fail to ripen early enough.

The year 1911 was a great flax year in the West. Seed often cost the farmers $3 per bushel, but the tremendous acreage in the province sent the prices tumbling to 70 cents in the harvest. At Scott, flax matures in about 124 days and yields on the average farms about 17 bushels to the acre.

Rye is grown successfully here and the returns are about 25 bushels to the acre, fall rye giving the best results.

Many Rotations Being Tried

Three or four rotations are practised. Rotation "C" is three years and is summer fallow, wheat, and wheat.

Rotation "J" takes six years and runs as follows: A summer-fallow, wheat, wheat, oats (seeded down), peas and oats (seeded down), peas and oats (seeded down), peas and oats.

Rotation "P" is for eight years. It outlines it as summer-fallow, wheat, wheat, summer-fallow, peas, barley (seeded down), peas and oats (seeded down), and peas and oats.

Rotation "R" takes nine years and shows summer-fallow, peas, wheat, oats, summer-fallow, wheat, oats (seeded down), peas and oats (seeded down), peas and oats.

The seed mixture used was Western rye grass, 10 lbs.; alfalfa, 3 lbs., and red clover, 3 lbs.

Potato Yields Are Big

The Western prairie lands ought to be the Irishman's paradise. Potatoes grow unlimited. Almost any yield and size of the tubers can be accepted as fact. The way the fine, big, clean potatoes roll out would delight the digger from some parts of the East where a few paltry bags are the season's reward.

At Scott, the potatoes were cut into pieces with two eyes in each and these pieces were planted in rows 2½ feet apart, the sets being planted one foot apart in the row. During the growing season they were scuffled and hoed regularly. They were ridged slightly at the last cultivation.

The yields ranged from 329 bushels for the Everett variety to 165 bushels for Vick's Extra Early. In all 17 varieties were grown, and the showing in the cellars as I was conducted through, amply justified the pride of all the staff. The quality of these prairie-grown potatoes is first class, and if the backbone of the continent were not so formidable in freight rates, the Eastern consumers would find their tables supplied with

them as well as they are by the progressive fields of New Brunswick.

The Orchard Possibilities

Every farmer in the West regrets his lack of orchard fruits. 'Tis true, he can grow strawberries, currants, gooseberries, raspberries, and certain plums to perfection. In fact the bush fruits have a luxuriance unequaled elsewhere. Some wild fruits also furnish abundance of dishes. The Saskatoon berries are a favorite dish with all Westerners.

But the way experiments are being conducted in apples, plums, and cherries augurs well for the production in no very distant time of some hardy varieties for these parts.

In 1911 a young orchard was set out on the Scott farm. These trees can be seen in the accompanying sketches. In apples, 42 varieties were set out. These were from the Central Experimental Farm at Ottawa, where Prof. Macoun has been making apple history in his hybrid varieties for many years. In all over 500 trees were set out. Several of the apples are Crabs and many others hardy hybrids of the Duchess and Fameuse. Seventeen varieties of plums were set out with a total of 118 trees. Ten trees of the Compass Cherry were set out also. Among these all the leading varieties of currants, gooseberries, and strawberries were planted. Many of these are bearing in abundance and every farmer in Central Saskatchewan will find a visit to the farm one of the delights of this summer.

Shade Trees and Hedges

But their arboriculture is not confined to these. Many shade trees and hedges are being experimented with and the spacious lawns are beautified by a well-laid-out arrangement of ornamental trees. A plantation of Manitoba maples that are now well advanced has done well. In the accompanying photo may be noted the cultivation these maples receive.

Many farmers are taking time to beautify their farms by liberal planting of shade and ornamental trees. When Saskatchewan farms have added to the prairie's attractiveness by a liberal use of roadside trees, there will be no more attractive farming district in the continent. Then the climate will moderate, the winds will gather less headway, and the joys of the prairie farmer increase.

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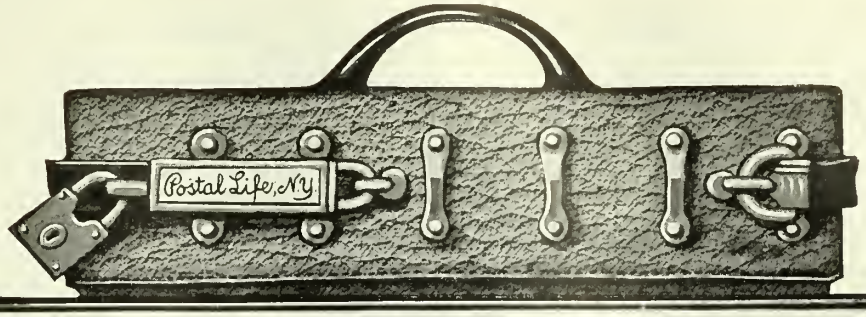
It is a hopeful sign that the young men and young women of the farms are taking an intelligent interest in these experimental endeavors of Mr. Everest and others. The joy of developing healthy



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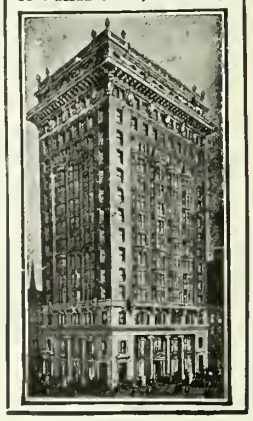

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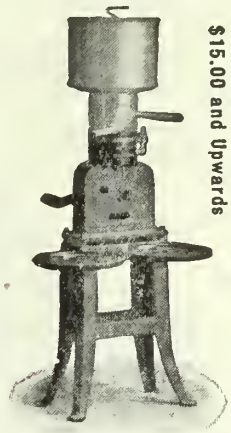

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and pleasant rural conditions is one thing that should be striven for by every lover of outdoor life. The boy or the girl who resolves to make prairie life more livable, adds thereby immeasurably to the sum of human happiness.

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Spanish Gold

Continued from Page 32.

isn't. He's simply, as I said, unattached."

"Still, I think I must have heard of him if he's what you say."

"You might not. I tell you. Higginbotham, there aren't half a dozen men in Ireland who could tell you even the principal kinds of regular officials; and when it comes to unattached freelances like Sir Giles, hardly anybody knows exactly what they are. I'm liable to make mistakes about them myself, as you saw when I spoke about Sir Giles yesterday."

"Still——"

"I may not be using technically correct language when I call Sir Giles an unattached official. I dare say there's some other name for what he is which you would recognize if you heard it. But the gist of the matter is the same, however you express it. He's in charge of the anti-tuberculosis movement, fighting the Great White Plague. That's what he's here for. This morning he made an examination of young Mrs. O'Flaherty's baby, little Michael Pat. You might have seen him going off in that direction at about half-past eight."

"I did."

"You saw him talking to her on the side of the road and her with the baby in her arms?"

"Yes. I happened at the time to be going——"

"Well, there you are. If Sir Giles isn't investigating tuberculosis on behalf of the Government, why should he bother his head about making a prolonged and minute examination of Mrs. O'Flaherty's baby? Tell me that."

"I don't know. I suppose it's all right."

"Well, then, don't contradict me flat when I'm giving you information which may come in useful to you. The fact is that Sir Giles wants you to help him tomorrow."

"But—but I don't know anything about tuberculosis."

"Nobody supposes you do. What he wants you to do is to go over early tomorrow to Inishmore in Jamesy O'Flaherty's curragh and make a list of all the cases of consumption you can find. You know the people, or at any rate you ought to, and of course Sir Giles doesn't. His plan is to follow you later on in

the Aureole. You're to start about six a.m. Allowing an hour and a half for the row over, you'll he there hy seven-thirty. After you've had a hit of breakfast—Sir Giles was most particular that you should hreakfast properly; he thinks you might catch the thing yourself if you went at it on an empty stomach—after hreakfast you're to stroll round the island and keep your eye lifting for consumptives. You needn't drag them out and lay them on the beach or anything of that sort. Just take a note of any case you come across so that when Sir Giles arrives there'll he no unnecessary waste of time."

"I never heard of such a joh in my life."

"Very likely not. But you ought to recollect, Higginbotham, that you'd never heard of Sir Giles till I told you ahout him. And you'd never heard of the anti-tuherculosis crusade."

"I had heard of that."

"Oh, had you? Well, this morning you saw with your own eyes the way Sir Giles was examining little Michael Pat."

"I didn't say I saw him examining the child. I said I saw——"

"Don't go hack on what you've just admitted. You said you were watching Sir Giles this morning. I don't call it a very gentlemanly action. But there's no use making the matter worse now by denying that you did it."

Higginbotham stroked his moustache nervously. He took off his spectacles and ruhhed the glasses with his handkerchief. He cleared his throat.

"I can't do a thing like that," he said. "I don't know how."

"It'll be all right," said Meldon. "Call on the parish priest when you land; he'll help you."

Higginbotham still displayed signs of uneasiness.

"Why does Sir Giles send me this message through you?" he asked. "Why doesn't he speak to me himself."

"He tried to. He and I were searching the island for you all afternoon. He went up to old Thomas O'Flaherty's place to look for you. I told him that you were likely to be there, but you weren't."

"I heard he was up there. I thought he might have been speaking to the old man about——"

Well, he wasn't. He was simply looking for you. Now Higginbotham, the question is simply this: will you go or will you not? I'd go myself in a minute, only I thought you'd like to get the chance. I've nothing to gain by being civil to Sir Giles, but you have. Why, man, your whole future depends upon the kind of impression you make upon these hig officials. You know the way they talk to each other in their clubs after luncheon. I tell you there's very little they don't know about every inspector and engineer in the country. If you've any sense you'll make yourself as pleasant and obliging to Sir Giles as you possihly can. I hope you don't mind my speaking plainly. It's for your own good."

"I think," said Higginbotham, "that

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I'll row over now and see Sir Giles myself."

"You'd much better not."

"Why?"

"Oh well, I don't like repeating these things. But of course it's pretty well public property. The fact is——"

Meldon took a cup from the table, put it to his lips, slowly raised his elbow and threw back his head.

"Only in the evenings," he continued, "after he's left the office. He never allows it to interfere with his work in the slightest."

Higginbotham gasped. Meldon nodded solemnly.

"Naturally," he went on, "the poor fellow doesn't care about having unexpected visitors dropping in on him during the evening."

"Good God!" said Higginbotham.

"Yes, it's frightfully sad. In every other respect he's a splendid fellow, one of the very best. We keep it as quiet as we can, but you can see it for yourself. You've only got to look at Langton's face to see it. You told me yourself that he'd got sacked out of his College Library for drink."

"But Sir Giles!"

"Oh, tarred with the same brush. Birds of a feather, you know. You see now why it wouldn't do for you to be going over there this evening. You're an official yourself, and I need scarcely say that a subordinate official is the very last kind of man who should mix himself up in a business of this kind."

"I see that, of course."

"I needn't say, Higginbotham, that it's no pleasure to me to repeat stories of this kind. I wouldn't have said a word if you hadn't forced me. I'm extremely sorry for Sir Giles and for poor Langton. What a promising career that man had before him! With his taste for manuscripts and the whole College Library at his disposal, he might have made a European reputation. Drink's an awful curse."

"But I thought you said he wasn't the same man."

"I may have said that at the time. I naturally wanted to shield Sir Giles as long as I could. But he is the exact same man. Poor old Euseby Langton! But we'll drop the subject now. I don't care to spend the whole evening gloating over other men's infirmities. The point I want to get at is this: Will you go to Inishmore to-morrow morning?"

"I suppose I'd better."

"Quite right. Take my word for it you'll be glad afterwards you did. And now, as you've got to make an early start I daresay you'd like to be getting home. Don't let Jamesy O'Flaherty oversleep himself in the morning."

"Major," said Meldon, when Higginbotham had departed, "I've settled that all right. Higginbotham and the curragh go to Inishmore to-morrow. They start at six a.m."

"How did you arrange it?"

"Don't ask me. I had a tough job."

Meldon lit his pipe and puffed great clouds of smoke. His nerves required steadying after the conversation with

Higginbotham. For a time he remained silent.

The Major was filled with curiosity—the morbid curiosity which makes some men eager to gaze on sights which fill them with horror. He pressed Meldon to tell him how the expedition to Inishmore had been arranged.

"I'm glad we'll get that treasure to-morrow," said Meldon. "I don't believe it will be possible to keep Higginbotham going much longer without his suspecting that there is something up. He's becoming extraordinarily sceptical about the things I tell him. I give you my word, Major, that at times to-night it took me all I knew to persuade him that I was telling the truth."

"I shouldn't wonder."

"I've made up my mind," said Meldon, after another pause, "that, if we get anything like the haul I expect to-morrow out of the Spanish captain's hoard, we'll give Higginbotham a good bagful of doubloons for himself. We owe it to him to do him a good turn of some sort. I don't feel that we've treated him quite fairly. It's rough on a man to set him searching for tubercle bacilli all day long on an island by himself. It's not in Higginbotham's regular line of work and I'm afraid he won't like it at all. I'm sorry I had to do it."

"What have you done?"

"I've just told you. I've sent him off to Inishmore to make a kind of census of all the consumptive people on the island. I told him he'd better get the parish priest to help him. By the way, what sort of a fellow is the parish priest of Inishmore?"

"He's a man called Mulcrone."

"Has he a sense of humor? I mean, will he see the joke afterwards, or is he the kind who'll make a row?"

"He can see ordinary jokes. At least he has something of a reputation for making them, but whether he'll see your kind of joke, of course I can't say."

"Oh, well, it won't much matter what he does once we have the treasure, and there's very little between us and it now. I think I'll turn in, Major. I'm a bit fagged. Michael Pat took more out of me this afternoon than I suspected at the time. I advise you to turn in too. We've a long day before us to-morrow. Good-night."

Half an hour later Meldon from his bunk addressed Major Kent, who had been on deck to wash his teeth.

"Major, Higginbotham's not nearly such a fool as you appear to think. If I were you I'd slide off that geological survey story of yours quietly and unobtrusively. Don't try and keep the thing up. I doubt very much whether you'll be believed if you do. Any disguise you assume in future when dealing with Higginbotham had better be very carefully tested beforehand. Good-night."

CHAPTER XII.

Next morning Meldon awoke earlier than usual. He turned out of his bunk at half-past five, and, as yachtsmen often do, began the day by tapping the barometer. It had fallen during the night

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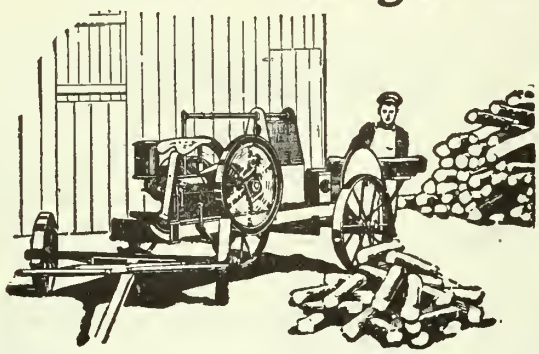

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and was still falling. He went on deck and looked round him. There no sign visible as yet of a change in the weather. Everything pointed to the certainty of at least one more hot day. He returned to the cabin and shook Major Kent.

"It's not time for you to get up yet," he said. "But I thought I might as well warn you that you'll have to be dressed and ready to start by half-past six."

"I'm not going on a fool's errand at any such hour in the morning," growled the Major.

"I thought you'd very likely say that when you woke. That's the reason I shook you up a bit before it was absolutely necessary. Some people are at their best when they first wake. All really great men are. I am, myself. Other people wake slowly and are uncommonly short in their temper for an hour or so after they get up. That's the sort you are. If you had a wife I'd pity her at breakfast-time."

Meldon went on deck again and surveyed first the Aureole, then Higginbotham's hut. At the end of a quarter of an hour he returned to the Major.

"It's all right," he said. "Higginbotham is stirring and I see Jamesy O'Flaherty fiddling about at the curragh. They'll be off in a few minutes. You'd better be getting up if you want half an hour to dress yourself. We'll breakfast on shore."

"I won't."

Meldon made no answer to this flat refusal. He went on deck again and stared through the glasses at the beach beside the pier. He saw Higginbotham embark in the curragh, watched Jamesy O'Flaherty take the oars, shove off and begin to row steadily. He returned to Major Kent.

"He's gone," he reported. "I hardly dared to hope he would, but he has. In a few minutes he'll be out of the bay. Then I'll swim across to the Aureole at once."

"What for?"

"To deal with the punt, of course. There's a nice little westerly breeze, and when I cast loose the painter she'll drift quietly out to sea."

"J. J., I've stood a lot of your foolery, but I'm not going to allow you to commit theft before my eyes and I'm not going ashore without my breakfast."

"I'll take your two points separately," said Meldon. "There doesn't seem to be any connection between them. First, there's no theft in taking my own punt and sending her out to sea. Second, you must come on shore at once or else the other fellows will wake. They can't get off the Aureole when they do, of course. But I'd rather not have them howling after us. It wouldn't look well if we refused to go back for them. People might say afterwards that we'd taken their punt from them. Whereas if we're well out of the way before they wake we can't be blamed for their being stuck all day on the Aureole."

"It's ten to one they see you setting the punt adrift, and then there'll be a nice row."

"They won't. What would have them up at this hour of the day? They know

jolly well that the tide won't be low enough to get into that hole at the bottom of the cliff till about ten o'clock They won't expect us to stir till after eight, anyhow. But I can't stop here arguing with you. You get a few bits of bread and some butter and sardines and things together, and I'll be off.''

Meldon dropped over the side of the Spindrift and struck out for the Aureole. He watched her keenly as he swam, and saw no signs of life on board her. The morning breeze ruffled the surface of the water slightly. The tiny ripples beat against his chin and cheek. The sun shone red through a faint haze. Meldon swam joyously. He was filled with the spirit of adventure and with delightful anticipations of success. The Aureole lay with her bow pointing to the shore. The punt was astern of her. Now and then she pulled at her painter just sufficiently strongly to lift it from the water and haul it taut. Then, while the drops still fell from it, the rope grew slack again and the punt ran up a little towards the yacht. The gurgling wash of the ripples against her side was pleasant to hear. Meldon gripped her by the stern, steadied himself, and lay almost flat on the water with his legs near the surface to avoid the suction of the punt. Then with a sharp jerk of his arms he raised himself till his chest touched the gunwale. He climbed cautiously on board, loosed the painter from the ring in the bow and lay still for a minute or two, watching the distance between him and the Aureole widen slowly. The breeze was light, and the punt did not drift very fast. Still, she moved towards the mouth of the bay. Sir Giles and Langton were apparently sound asleep. Meldon slid quietly into the water again and started on his return journey to the Spindrift. Now and then he turned over on his back and swam for a few yards with his eyes fixed on the Aureole. There was no sign of awakening on board of her.

He climbed into the Spindrift by the bight of rope he had left hanging over the side for his accommodation.

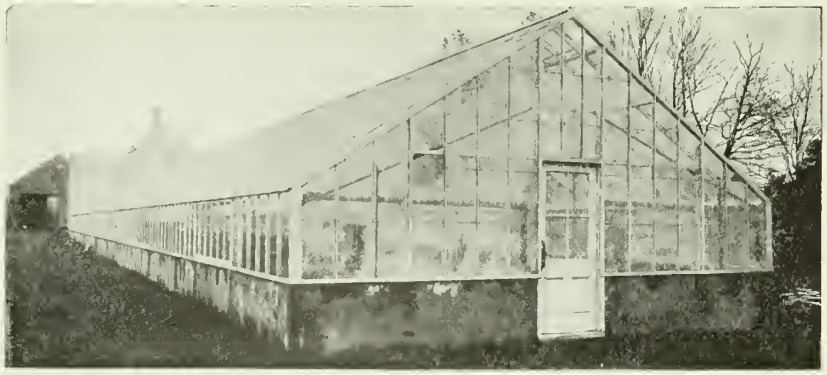
''Major,'' he said in a delighted whisper, ''the coup has come off. Where's my shirt? Isn't it extraordinary the way things move about during the night? I could have sworn if left it on the end of my bunk. Ah! I have it. Now the sooner we're off the better. Slip the breakfast into the punt and get in yourself. Go on ,man. If you want to argue when we're on shore. We haven't a minute to lose. I wouldn't trust that beast Langton not to sneak up in his pyjamas to have a look at us. He did yesterday.''

Major Kent, grumbling and protesting, was hustled into the punt. Meldon followed him and paddled briskly to the shore. There was no one, not even Mary Kate, on the pier when they reached it.

''Now,'' said Meldon, ''get the punt ashore and fold her up. We're going to take her with us.''

''Why should we drag the punt? We'll only be cutting her to pieces on the rocks.''

''Why? Because in the first place,



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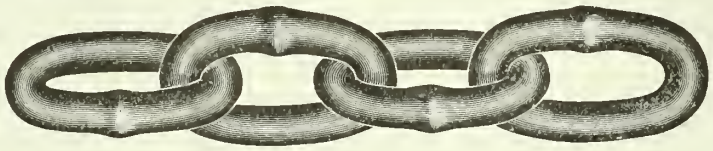

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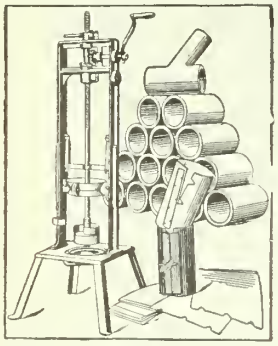

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as you'd see if you troubled yourself to think for a single instant, if we leave her here some fool will go off to the Aureole in her when those fellows begin to shout for help. In the next place, because you can't swim, and we'll want her to carry you up the channel to the bottom of the cliff. I must say that these collapsible punts, beastly as they are to row in, have certain good points. We couldn't have carried the ordinary wooden boat all round the island. Just you fold her up while I go over to the curragh there on the shore."

Major Kent lifted the punt out of the water and folded her flat. Then he looked up and saw Meldon, with four oars on his shoulders, going up the hill towards Higginbotham's house.

"What are you doing?" he called.

"I found four oars," said Meldon, "and I'm going to put them in through one of the windows of Higginbotham's house. Nobody will think of looking for them there. I wish to goodness you wouldn't shout at me like that. You'll waken every man on the island before you've done, to say nothing of Sir Giles and Langton."

The Major pursued Meldon up the hill and seized him by the arm.

"J. J.," he said earnestly, "I call this theft."

He had the true English respect for law in spite of the fact that both him and his father had spent their lives in Ireland. The very thought of an unhallowed interference with property shocked him inexpressibly.

"You may call it arson if you like," said Meldon, who had nothing but Irish blood in his veins, "or malicious injury, or agrarian outrage, or intimidation I don't care if you call it cattle-driving or even boycotting. I'm going to stow the oars away all the same. I can't have the owners of the curragh rowing off to the Aureole and putting Sir Giles on shore as soon as our backs are turned."

Meldon breasted the hill and reached the iron hut. He tried each of the four windows in turn. They were all bolted. With the end of one of the oars he deliberately smashed a pane of glass.

"For Heaven's sake, don't," said the Major.

"I must; Higginbotham will probably grumble, but that can't be helped. He'd no right to go away and leave his house barred and bolted as if he was afraid of burglars."

"He very well might be afraid of burglars when you're about."

"Now look here," said Meldon as he shoved the oars through the broken pane, "I don't mind your being abusive, not the least bit. You've been calling me a liar and a burglar and other bad names since ever I brought you to this island. I haven't resented it a bit and I don't. But I tell you what I do dislike, and that's your abominable unreasonableness. I can't bear men who are carried away by mere words and don't stop to think about the meaning of what they say.

To Be Continued.

Rearing Turkeys Nature's Way

A profitable source of income and an interesting side-line for the farm house mother.

How a Flock that was Never Coddled Brought the Easiest Money on the Farm

By A. M. KEPPER

THE Bronze turkey, said to be a cross between our northern wild male and the Mexican hen, is our largest variety. Prolific, and exceptionally tame, considering it is but a few years from the wild, it is more robust and develops faster if given a measure of the freedom of its ancestors.

My turkey house is the trees. They like the pines best and will snuggle there in seeming comfort through storms. They do not go into the houses in winter even when the thermometer registers 15 degrees below zero. Such outdoor creatures do not contract roup nor cold. They come to the breeding season in excellent health. The one care is to avoid surplus fat. This is one of the difficulties of turkey-raising where livestock is being continually fitted for market on Indian corn. It is too fattening for best results, if they are allowed all they will eat.

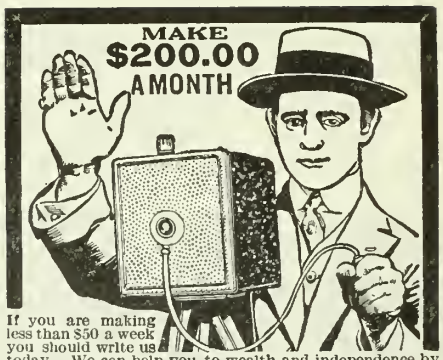
When selecting breeders, bone is of more importance than feather markings, to the one who caters to the table demand—bone, large and strong, that will carry much flesh. If the size is to be increased, select large hens. The tom should not be much above standard in weight. He should be tall; long-legged turkeys have a way of getting out of water or other difficulties wnen young. The aged hen will not lay as many eggs before becoming broody, but she makes a better mother and poults are stronger—other conditions being equal. If healthy, breeding hens may be kept with profit until five or six years old. Indeed, it is unwise to discard them earlier unless there is opportunity to increase the size considerably. If the tom develops into a heavy-weight, put in his stead a big-boned youngster. Inbreeding undermines the stock. The practice of swapping males in a neighborhood will, in a few years, give the death-blow to profitable turkey culture.

The natural food of poults is mostly protein. This comes to the field-roamers in bugs, worms, etc. The weed seed and grains give a proper balance. When attempting to raise them with foster mothers, this ration must be copied. Well-drained cottage cheese is very good and an ever ready source of supply on the farm. Along with this, a little steel-cut oatmeal, fine sand and shell may be given—increasing variety as poults become older.

The beginner is often perplexed at what she terms stupidness in the young when she is teaching them to feed. As with the newly-hatched chick, nature has given ample material to sustain life and give strength during the first forty-eight hours, in the yolk of the egg which is drawn into the body just before the youngster pips the shell. To feed before this has been digested is to invite disaster.

Poults always raise their heads for food. The habit of the natural mother is to take the bug or other morsel in the beak, the little ones reaching up for it. A bit of cottage cheese held between the thumb and finger will set him jumping lively. Little by little they come to feeding from the ground.

Hand-reared poults are fatter when about the size of quail than those that are brought up in the natural way, but the former lose in stamina. At about this age they become very difficult to rear. They stunt or die outright, while the thin, long-legged field-roamers run swiftly and fly with ease, and are less



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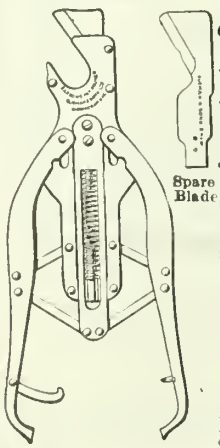

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likely to become prey for cats or wild animals.

One of the essentials to turkey-raising is a farm enclosed with a hog-tight wire fence. Edgewood farms are thus inclosed and the turkeys never bother neighbors' fields. They may be seen, especially at nesting time, running along the wire fence trying to find means of escape. (Board and rail fences do not confine them.) Never being able to discover the top of woven fencing, after a time they give up the struggle and return to orchard or garden to creep under a gooseberry bush or other brush to nest.

Unless weather is cold, eggs may be left in the secluded nest and to the care of the hen. Each day she turns them, then piles on leaves or grass before leaving them.

Poults do well with little water, nor must they be hatched early to make great birds by the end of November. The lesson of late-hatched, naturally-reared poults was impressed one season when April was well advanced before eggs were found. Then there were but three large, heavily freckled ones in the nest. Daily the number was increased until there were fifteen. When the young were due to hatch an attempt was made to confine them, as usual, but the mother got the start and crept through the fence into a wilderness of alfalfa and other growth, and was lost to sight for a month. There was no opportunity to help her feed them nor was there stream or pool in the field, nor standing water. It seemed they must surely perish. Yet it was futile to attempt to find them or try to drive them out. Two drenching June rains came. It seemed they could not survive. Yet why did the mother not return?

One day the sickle gleamed in the sun. The grass went down. There was an awkward run across the open—a big bird with flying-running young all about her making straight for the clover field, never looking back.

A few weeks later she came proudly into the barnyard at evening with fourteen young ones shyly following, straight to the water-trough, then to the old pine where she had spent the winter. She had saved them through those first critical weeks.

After this she brought them home regularly at night, but at peep of day was afield. They developed into such a beautiful flock, that passers-by stopped to engage breeding stock, saying they were the finest in all the countryside. They stayed near the house when frost had killed the insects in the fields and were tame. One young tom tipped the scales at twenty-one pounds by December 1st. When marketed in January the largest weighed twenty-six pounds, hens sixteen to eighteen pounds each. These were reared without human help. They paid for their feed by ridding fields of harmful bugs.

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Continued from Page 24.

to shallow wells, as the cylinder is near the surface in a dry well. If the depth to water is greater than the suction limit, it is necessary to dig a dry well deep enough to place the cylinder within the suction limit. Nos. 3 and 4 are drilled wells consisting of a small hole which may be from three to fifteen inches in diameter. This hole is lined with an impervious iron casing which prevents caving in and keeps out all water, except that which enters at the bottom. This type of well can pass through as many water-bearing beds as desired and none but that from the lowest will enter. The casing is large enough to allow the cylinder to be placed below the water surface, or as near the water as is necessary. No. 4 shows a drilled well with a dry well installed above it to accommodate the lower half of a pump made for underground discharge.

Linings and Curbings

For lining shallow-dug wells the latest practice has been the use of reinforced concrete. This has also been successfully practised in lining deep dug wells.

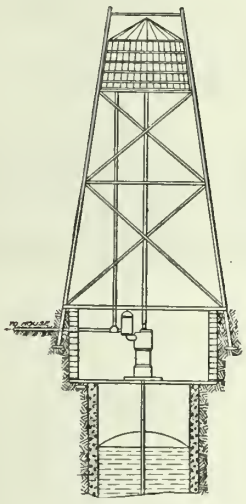

Fig. 6.

Concrete may be made practically impervious to water so that a concrete lined well can be polluted only from the bottom.

Both shallow and deep wells should have water-tight curbs, in addition to impervious casings. The drip from the pump is often the cause of serious pollution. The casing or lining should extend six or eight inches above the ground surface, except when a dry well is used, and a concrete curbing should be built over the top with a slope away from the pump opening in the centre. This cover should extend at least two feet beyond the edge of the well if a dug well, and if a bored or driven well the cover should ex-

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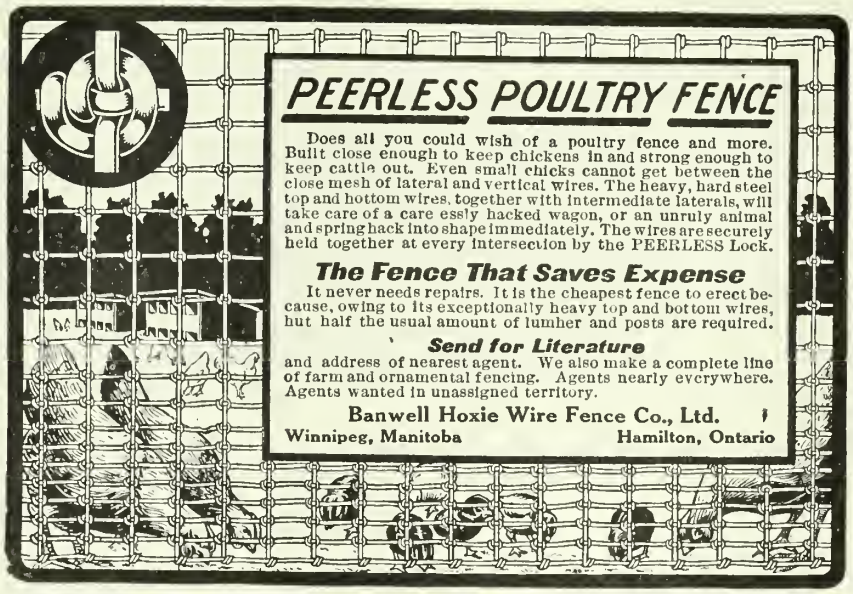

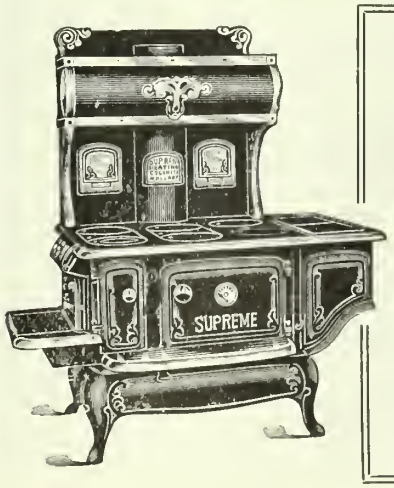

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tend four to six feet in all directions from the centre. The outer edge should be raised to form a trough emptying into a tight drain, or a drain trough should be provided to catch the drip. E. Bartow suggests that the earth be excavated for four feet outside of the regular casing to a depth of four feet, and that an extra four-inch coating of waterproof Portland cement mortar be placed outside this casing with four to six inches of mortar in the bottom of the excavation. This bottom should have a raised portion at its outer edge to divert the seepage water to a tile drain. This arrangement prevents surface water that has not been filtered through at least four feet of earth from gaining access to the well. Figure 4 shows a combination of these protective arrangements.

Pumping, Storage and Distribution of Water

After a pure water supply is made available the first things to be considered are the quantity of water needed, choice of pumping equipment, and means of storage and distribution.

The quantity of water needed depends on the power used and whether the service is for the entire farm or for the house only. Hand-operated systems are applicable where small quantities are required for house service only, but in case water is wanted for stock also, the use of a windmill, engine, electric motor, or hydraulic ram is necessary. If a wind-

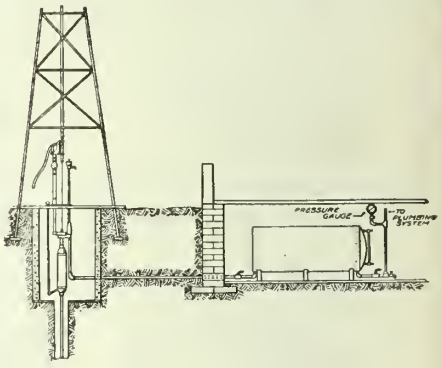

Fig. 8.

mill is used the storage should be large enough for at least three days' supply, to provide water in case of calm weather. Where the other sources of power are used the storage capacity need not exceed one day's supply. The following table gives approximate quantities of water required per day.

Approximate Quantities of Water Required per Day

	Gallons.
Each member of the family for all purposes will require	25-40
Each cow will require	12
Each horse will require	10
Each hog will require	2½
Each sheep will require	2

The water consumption will vary from day to day and with the seasons. Fire protection will also be considered, and in determining the size of the tank the maximum amount likely to be required should be provided.

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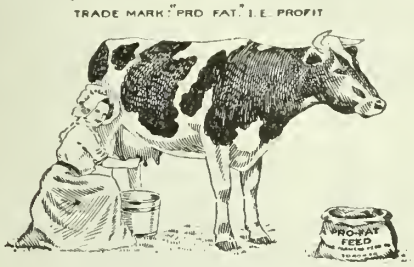
Straw may keep your cows alive but it will not produce milk. Your dairy profits depend on your feed. Hay will produce some



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For a family of six persons a 200-gallon supply should be sufficient if the water is used in the house only. On a farm where water is supplied to a family of 6 persons, 10 horses, 12 cows, 25 hogs, and 15 sheep, the daily storage supply should be at least 500 gallons, with whatever additional amount, if any, the farmer deems necessary for fire protection.

There are three general systems of storage and distribution which may be readily applied to farm conditions, viz., the gravity, pneumatic, and auto-pneumatic systems.

The Gravity System

In the gravity system water is forced into an elevated tank placed higher than the highest discharge cock. A storage tank may be placed in the attic, on the roof, or on the tower outside. Fig. 5 shows a gravity system with the storage tank in the attic and Figure 6 shows the storage tank placed on the windmill tower.

Since there is considerable frictional resistance to the flow of water through the distribution pipes, the tank should be placed at least ten feet higher than the highest discharge cock to insure a flow under pressure.

Water weights 62.5 pounds per cubic foot, or about 8.4 pounds per gallon, so that in placing a tank in the attic or on

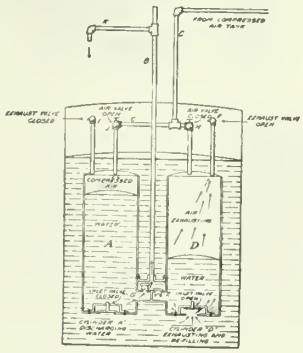

Fig. 9.

the roof the supports should be made sufficiently strong to uphold this weight.

Either wooden or galvanized metal tanks should be used. Wooden tanks may be lined with tinned copper, but never with lead.

The Pneumatic Tank System

The pneumatic tank system consists of a force pump, an air-tight steel tank, necessary pipe, valves, fittings, etc., and power for operating the pump. The system may be a small one operated by hand, windmill, or small engine, or it may consist of a large pump operated by a powerful engine with two or more tanks of large capacity. The tank may be placed in the basement or underground, thus keeping the water cool and preventing freezing. Figure 7 shows a pneumatic system with the tank in the basement and supplied by a hand force pump. This figure also well illustrates the water plumbing. Fig. 5 shows the tank in the basement supplied by a windmill deep-well pumping outfit. The tank

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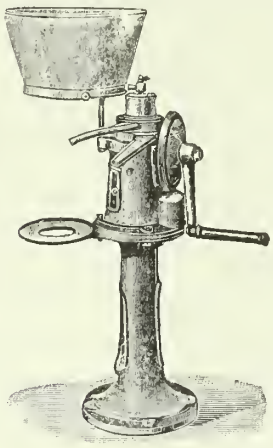

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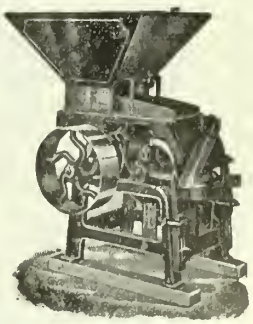

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may be set in the ground below frost line close to the well or house foundation.

In the operation of the pneumatic system water is forced into the air-tight tank, thus compressing the air into a smaller space and creating an air pressure which forces the water to the discharge cocks. In determining the capacity of the tank, then, it is necessary that about one-third of the computed storage capacity be added to provide space for the compressed air.

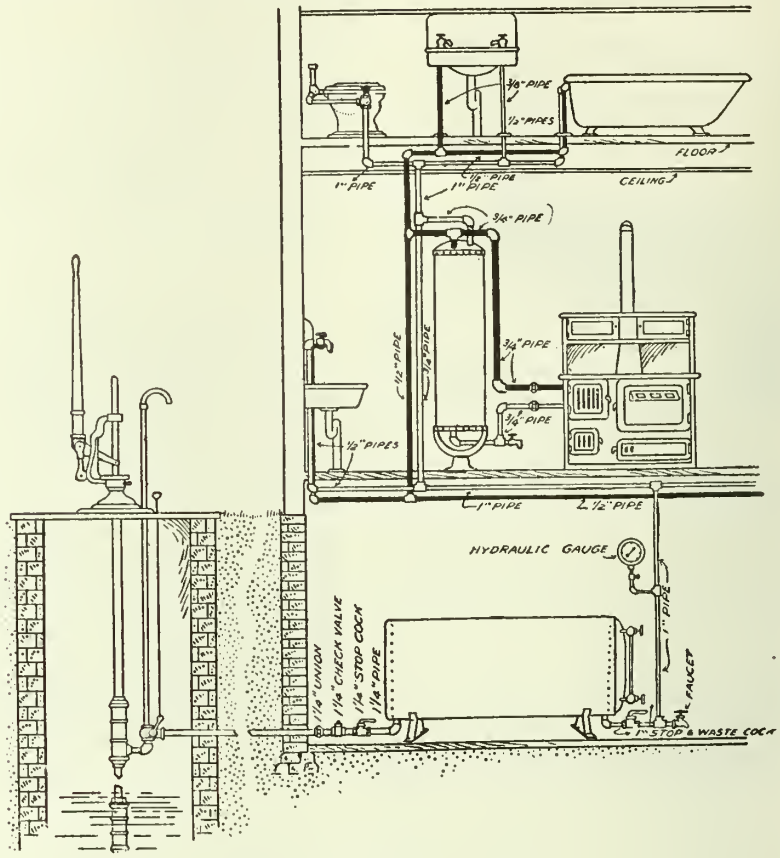


Fig. 7.

The Auto-Pneumatic System

In the auto-pneumatic system the water is delivered fresh from the well to the faucets. The system consists essentially of an air compressor driven by a small gas engine or electric motor, an air-tight steel air-pressure tank, and one or more auto-pneumatic pumps. No water tank is required, since nothing is stored by compressed air. The pump consists of two small metallic chambers submerged in the water, and when a faucet is opened they automatically fill and discharge owing to the air pressure from the storage tank, thus giving a continuous flow of fresh water.

Fig. 9 illustrates the principle of operation of the pump. Suppose a small air-tight tank A with inlet valve is submerged in water and allowed to fill. A discharge pipe B is connected at the bottom leading upward to faucet K. Compressed air is forced through pipe C into the top of the tank so that the water is forced out through the discharge pipe until the tank is emptied of water. A similar tank D is connected as shown. The pump has a device for automatically opening and closing the air valves and exhaust valves to the tanks alternately. While A is emptying of water D is filling and they discharge alternately.

The auto-pneumatic pump can be used in wells, springs, and lakes where the water is free from sand and mud.

SOME FERTILIZER RESULTS

The Ohio Experimental Station at Strongsville has been conducting tests on cold, heavy, clay soil since 1895 to ascertain the value of chemical fertilizers. Their results might be of service to Canadian farmers, and the leading points may be summed as follows:

Wherever potash has been applied it has produced a profitable increase in a crop.

Nitrogen and potassium have produced a smaller effect than phosphorus.

While nitrate of soda and muriate of potash have been used at a loss. The fact that the largest yields of crops were harvested only when a fertilizer has carried nitrogen and potassium in some form indicates the necessity of supplying these elements in some cheaper way.

Acid phosphate and "steamed" bone meal have been the most effective carriers of phosphorus. "Steamed" bone meal has been more effective than "raw" bone meal in this soil.

When raw phosphate rock was supplied at the rate of 2,000 pounds to the acre every five years, it has produced a greater increase in the cereal crops than raw limestone in twice that quantity. In the more recent years clover has failed on the phosphated land, though growing with increased luxuriance on that receiving limestone.

Land O'Gold

Continued from Page 11.

feeling crept over me, compounded partly of reverence for her, partly of self-belittlement and partly of shyness. I longed to speak but would have been silent for ever before those eyes. Of such things is love made.

I would have turned away but an acquaintance called me to them and I underwent the formality of an introduction—with closed ears. I remembered only one of that group, and her I could never forget.

I do not well remember all that passed that afternoon. Her voice was music to me. I found myself actually taking her to lunch. Then I was conscious of Jack Harvey scowling at me. I had met him before. He had an evil face and a huge diamond ring. From that moment I hated him with a full heart, and I began to see clearly again.

We were congenial in many ways. Our tastes, we discovered, were similar. The minister, whom I had pleased by an address—a crime Dickey called it—Skim Milk Religion, at the Epworth League, spoke a kind word to us. And every time Harvey came around I launched into some scientific discourse with a blind joy.

But after she had gone my spirits fell. I was an undergraduate with exactly three hundred dollars to my name; and she—what was she? I knew only her name. Her card was as simple and as unassuming as she, but the address staggered me. Laurier Avenue East! Who might the Adams's be, anyway?

"Say Jimmy, your conceit's overpowering!" said Dickey next day. "Who do you think you are, anyway? Old man Adams' daughter for yours, eh! Bring me the ice, quick!"

"Old man Adams, who's he?"

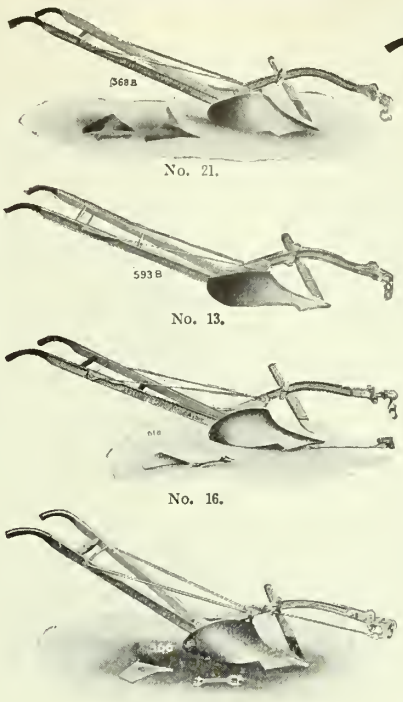
"Who's he? Oh! he isn't anyone at all. He just owns all the visible lumber in the world I guess, besides a few factories and warehouses and other trifles like that."

I just laughed. I wouldn't let Dickey see how badly I felt. I told myself each day a dozen times that I would never see her again. But when the evening came upon which I had asked to be allowed to call, I went: and I went many times again after that.

I saw her occasionally on Sparks or Wellington streets and Jack Harvey was usually with her. How blindly I hated him then. It was not only that I feared him, for indeed, I had not yet learned to hope myself, but I feared for her sake. He had a sensual mouth and a muddy eye that told their own story. What did I care for his family or his surface culture! Jack Harvey's type never spares a woman.

One Saturday afternoon Miss Adams—she was "Miss" then—and I were standing over the river in Rockcliffe Park. I had been telling of the old days when Roman agriculture had waned as unjust taxes forced the rural populace back.

"And finally little by little the desert



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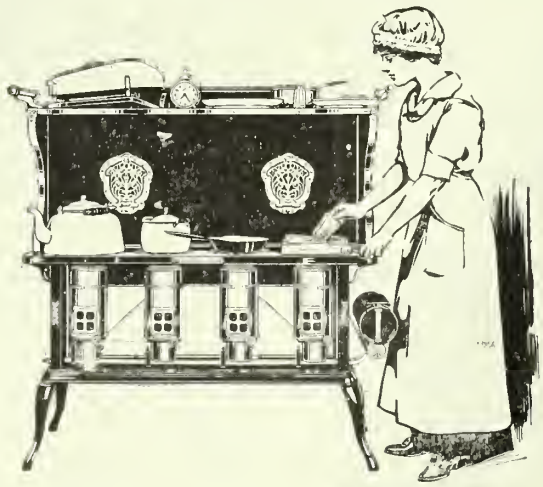

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came in, and so ruin came upon them," I concluded.

She had ceased to hear me. Her gaze was fixed, upon the little white-washed French homes away among the mountains in Quebec. In a voice infinitely sad she murmured "and little by little the desert came in—Oh, yes! you were saying the Roman Empire waned," she continued hurriedly.

I went home that night feeling a mystery creeping around me. It was many moons before the mists lifted.

Mrs. Adams, I found to be a very sweet little woman unaffected and unassuming—one of God's gentlewomen. She had a bright smile but often when the smile died a tired, wistful expression settled upon her face. It was a deep shadow and I often searched to discover the cloud.

The Lumber King was a queer case right enough. He had started on the upgrade from the yard of a northern sawmill. Stern and brusque in manner he had a forbidding personality. But he had one loop-hole. His hobby was agriculture. More than once I have sat with him discussing agricultural conditions, balanced rations, crop rotations—whatnot—while Harvey chatted with Grace and her mother. How I cursed Harvey, and Adams with his agriculture, in my heart then.

Yet I could see with half an eye that all was not well in that home. It was beautifully furnished and splendidly equipped. But something sat heavily upon us when Mr. Adams came in. In our talks he never missed an opportunity to criticize the women—their dress, their methods of entertaining, of seeking pleasure—everything. He railed bitterly against dancing and bridge, and entertainment generally, and nailed all his arguments with Scripture. I began to have an inkling why there seemed to be such little social life around the mansion. In those days I rather liked old man Adams, and he found me to all appearance a rapt listener of his farm theories. I believe he thought I came to see him.

One day in September as we were going along the driveway I told Grace all about Land O' Gold. I told her of my father and of the brave fight he had made, and of the gold that had never been found. I told her of the Mater and of Molly. Then I spoke of poor old Land O' Gold itself: of the old orchard and the broad fields; of the weary, hopeless fight some made in that valley, and of the homes others hewed out of hard surroundings by strength of arm.

"How grand," she said turning impulsively toward me. "I have heard father tell of the days up North. It must be a great thing to feel yourself face to face with the forces of nature; to be a unit in the great battle of civilization; to be free and wild; to live your own life and to think your own thoughts. And then the romance of it all, the opportunity to develop latent possibilities. I suppose you are going back to Land O' Gold after you have been given your degree?

"Perhaps you think this strange," she continued, as I looked wonderingly at her "But I get very tired of this little life.

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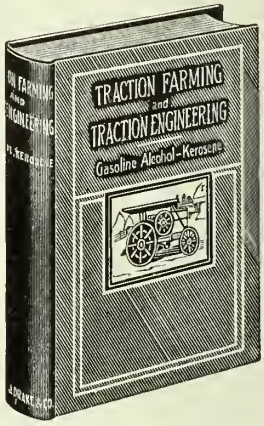

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I live by rule. I move by precedent, speak in set phrases, almost think by convention. The men are polite in my set and the woman are fashionable. But they don't breathe of great open spaces where tempests blow nor of the great trials of life. I have had to live a negative existence. Things have always been done for me. How I long just once to be positive; to engage in a real fight that will call for energy and courage. If I had been a boy, it would have been different."

I thought often during the months that followed of the face that was turned toward the canal that evening. I looked that day for a moment upon the spirit of the old lumber king, in all truth; and I knew the staunch little heart that beat under the white gown, for the first time.

On my way home a wave of hopelessness and of helplessness surged up in my soul. It turned me sick all over.

"Why be such a fool," I questioned. "It is as hopeless a quest as the search for the Holy Grail. I have failed at everything I have ever attempted. I am but one of the multitude. I came to seek gold and have found only clay. I am a miserable failure."

I was in a black mood when I reached my room on Nepean Street. Turning on a light I saw a telegram on my writing table. I tore it open hastily.

I had prayed for something to turn up. God knows it had with a vengeance.

I threw my things together and wrote a note to Dickey to forward them to me.

"I may catch the westbound," I thought as I noted the time, in my dash for a car.

(To be continued)

The Prairie Pioneer

Continued from Page. 8.

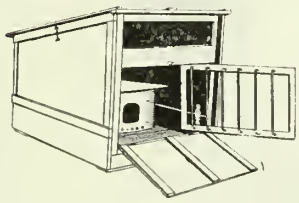
who went out from Grande Prairie to Edson and back tells me he read Bret Harte, Dickens' "Tale of Two Cities," and several magazines, sitting beside the stove in his canvas caboose. That is what Irvin Cobb would call "Trailing de luxe." It is by far the best way to bring a family into the Peace River country at present, though by next winter the railroads should be nearly to us. They will be welcome.

If there is one situation where co-operation is advantageous above others, it is in the settlement of a new region. Apart from the social advantage of having well-known and congenial neighbors; apart from the convenience of bloc settlement in the organization of school districts and churches, is the very great help one may be to another in the loan or joint purchase of implements and utensils. One man brings a mower, another a rake, another a drill and harrow, another a two-furrow plow. One has a few carpenter tools, another a small portable forge, one a few wax ends and a riveter with a handy assortment of rivets. By the mutual loan of these and by changing work, the settlers assist each other.

In the vicinity whence I write is a conspicuous example of this. In April, 1909,

Boon to Poultry Men

Simpson Patent Folding Poultry Equipment



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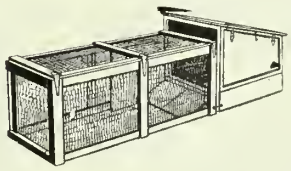
Hover, fibre, folding, sanitary and perfect in every respect. Price F.O.B. London, $1.50.



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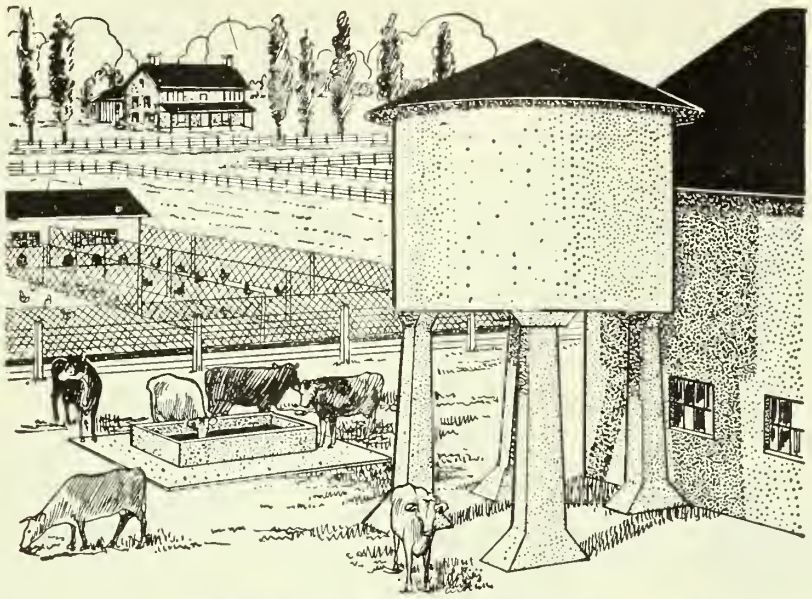

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a party of Ontario people set out from Edmonton on a five-hundred-and-fifty-mile trek by ox-team to Grande Prairie. Few of them had any capital worth mentioning, beyond a very simple outfit and the South African veteran scrip with which most of them had succeeded in providing themselves. The difficulties met on the way through the wilderness would fill a book. Suffice to state, they reached the "Promised Land" in the middle of July, just before the district was surveyed. Only three families of Americans and repatriated Canadians had preceded them into this far-famed prairie. They arrived with food supplies all but exhausted and too late to put in a crop that year. To obtain flour three teams doubled back to Peace River Crossing, a distance of a hundred and thirty miles—a little farther than from Toronto to London—only to find the supply exhausted. Later they set out again but on arrival at the Crossing had to wait and help thresh the season's crop of wheat before it could be ground into flour. They returned late in October with the much-prized breadstuff. A few vegetables were purchased from the local settlers who had preceded them. Game helped out the bill of fare, prairie chickens and partridge being numerous, as they still are. Cows and hens contributed importantly. Gradually the community got on its feet, and was reinforced by several later arrivals. Implements were shared by conveniently located groups. A threshing outfit was bought by the neighborhood, and such was the rapidity of settlement and crop production after the second year that the earnings of the outfit met all payments after the first one and thus an original outlay of twenty-seven dollars apiece, netted last autumn, when the business was closed out, over a hundred and fifty dollars apiece. A small flour and grist mill was retained and a new threshing outfit is coming in to replace the one disposed of. To-day every one in this co-operative contingent, as well as practically all others in the extensive settlement they have so substantially helped to pioneer, is comfortable, prosperous, contented and enthusiastic regarding the future of the country. What with homestead entry and scrip half sections, two or three of the families comprising young men now possess more than a thousand acres of land each, besides stock, implements, furnishings, good log houses and stables. I am personally familiar with instances of families worth not over three thousand dollars five years ago who are now not over-rated at thirty-five thousand after allowing for borrowed funds at compound interest. When the railroad enters the district the value of their land will be much greater than at present. Only by co-operation could this have been accomplished.

Self-sufficient as the settler must in a large measure become, he is not content to be wholly so. Insistent wants he knows, which can only be gratified from the outside world and the outside world demands cash for goods. Every paper or magazine taken, every letter written, every garment purchased, every implement or utensil represents an outlay of

money. In advance of the railway what is there to bring in cash?

Well, the North is still a fur-bearing country. Trappers must eat. Settlers sometimes sell them eggs, butter, bread, and occasionally horse feed. This demand is small, but it is the first one. The Government spends money surveying and policing the country, as well as building roads and bridges. The men who do this work must eat. Often their gangs are recruited in part from the settlements. This portion of the wages paid out goes to make up next winter's grub-stake. Banks and stores open. Sawmills commence operations. Thirty-five miles from where I write a lumber company is this winter cutting a million and a half feet of spruce and jackpine logs for lumber and shingles, and another company beside them is also making a large cut. Many settlers find work in the logging camps and mills.

But the biggest home market is that supplied by the inrushing tide of settlement. All the newcomers bring cash, and all must spend much of it for food, feed, breeding stock and seed. The population of Grande Prairie has been estimated at around three thousand souls. Last fall and early winter five threshing outfits winnowed three hundred and seventy-five thousand bushels of grain, besides which enough was probably fed out of the sheaf to run the total crop close to half a million bushels. This with the produce of some livestock and poultry represented the principal agricultural output of the section. Yet, owing to the factors mentioned above, the store goods brought into the prairie will exceed the value of the year's produce. A leading merchant whose business is expanding by leaps and bounds, estimates that a million dollars' worth of merchandise has been brought into Grande Prairie this past winter. Fifty-five teams have freighted goods to his own store, which happens to be within a stone's-throw of my typewriter.

Under the circumstances noted above, it is easy to understand how prices of farm produce have held high up to date, wheat commanding $1.50 to $2 per bushel, oats thirty-five to fifty cents, butter fifty cents a pound and eggs forty to fifty cents a dozen. Of course, as the ratio of production to immigration increases, this condition tends to change, but in a very short time we expect to have railways to Vancouver, Prince Rupert and Edmonton, giving outlets superior to those enjoyed by any other extensive section of the Western plains.

Furthermore, we have every prospect of extensive mining, lumbering, transportation and hydro-electric development, guaranteeing a permanent home market for much of the Peace River district's agricultural produce. The Mackenzie basin, including the valleys of the Athabasca and the Peace, bids fair to become the most self-contained region of the Canadian West. So the settler has small need to worry about future markets. The present is good and with the advent of railways, the future will be better. Happy the settler who has already made, or is about to make, his start.

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The Rod with the **Lock Joint.**

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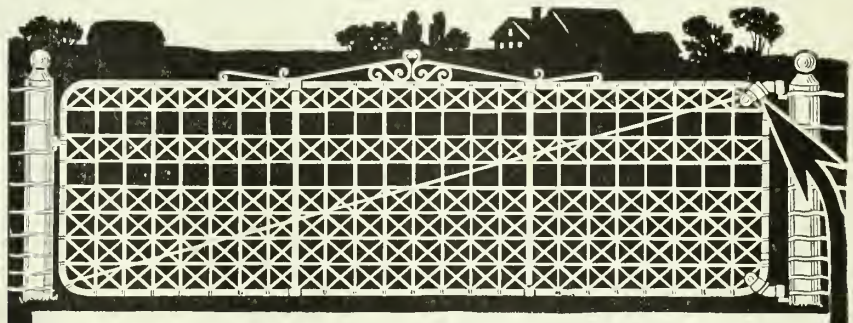

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with attached BRACE TIGHTENER overcomes this disadvantage. In "IDEAL" GATES the brace wire can be adjusted or replaced in less than two minutes with an ordinary wrench and then you practically have a new gate. Our new Hinge Clip also carries the weight of the gate direct from the top hinge bolt, thus relieving the frame from any unnecessary strain.

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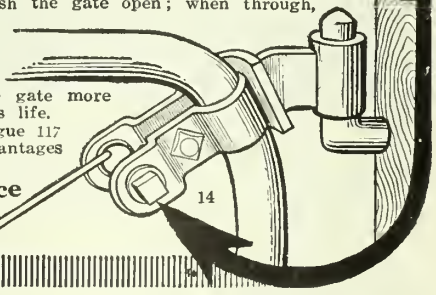

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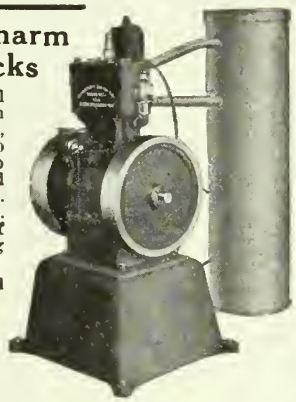

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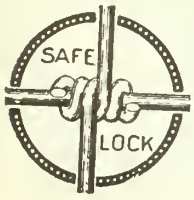

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Between Ourselves

A Box for Home and Family Queries

By GENEVIEVE

To Enamel a Sink

Q.—In the latest number of *Farmer's Magazine* in your article on "Convenience and Charm in the Kitchen," you say, "if you have an iron sink it can easily be enameled. I have a galvanized one and was wondering if you could tell me if it could be enameled. It is almost impossible to keep it clean as it is. Where could I get enamel? and could I do it myself? or would it be necessary to have it done away from home?

I enjoy your paper very much.

Mrs. E. L. B.

A.—Your sink should enamel beautifully. You can get the enamel by sending to the T. Eaton Co., if your local stores do not handle it. Ask for bath enamel. It is put on just like paint. Have your sink scoured clean and give it at least three thin coats letting each become thoroughly dry before applying another. The enamel costs twenty-five cents a half-pint.

Formaldehyde Candles for Bed Bugs

Q.—In the July number 1913, you write on household pests. We are troubled with bed bugs, and I am much worried. We tried the permanganate of potash and formaldehyde, but it had no effect. The house is not plastered and there are too many air spaces for fumigation, so we must try something else. You spoke of corrosive sublimate being sprinkled into cracks, but it would be impossible to do that here. What proportion would you use in water, as I think if we could wash all the cracks it would be better. Would you advise the fumigation with lime and formaldehyde by making it much stronger when the house is open and large. We have no partitions as yet (are homesteading), and our house, though warm, is open.

Mrs. M. C., Sask.

A.—you have my sincere sympathy. I have heard before of the trouble the Western housekeepers have with these pests, and since receiving your letter have taken the matter up with several authorities, and have come to the conclusion that the only effective method is fumigation. You say your house is open, but if it is warm enough to winter in, it can be fumigated, although the process will likely have to be repeated several times. Anyway this would be necessary to get the young ones that were not hatched when the first application was given. A druggist advises the use of formaldehyde candles instead of the liquid. He says the fumes of these are more penetrating, and I presume that your greatest difficulty is that the bugs get into the cracks where it is hard to reach them. When you get into your permanent house the plastered walls will make it possible to get rid of them.

The druggist seemed doubtful about washing the walls with even a strong solution of corrosive sublimate, but I do believe the formaldehyde candles will work. As a rule we use a two-ounce candle for 1,000 cubic feet of air space. You might use three times this quantity. You can get the candles by sending to Eaton's if your local dealer does not keep them.

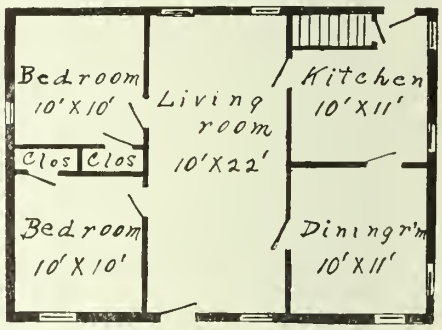
Try to leave the house closed for twenty-four hours if you can and don't go into it until it is well aired. This will be pretty hard to do unless you can go for a visit to stay over night.

Bungalow Plans

Q.—I noticed in the March issue of the magazine, plans for a bungalow house. Now at what price would this be completed and could you give me plans of some at about $500 or less, if possible?

M. A., Ont.

A.—We cannot give you accurately the cost of the bungalow shown in our March number. With a furnace and plumbing it would probably amount to $2,000 in Ontario. Any of the following houses might be constructed for about $500. Unless you have your material at hand you



might find it helpful to write to the Sovereign Construction Co., Ltd., C.P.R. Building, Toronto, for their catalogue of "Readi-cut" houses. They sell the lumber ready cut making it easy for a man to do the building himself.

Q.—In your recent issue of *Farmer's Magazine*, we note a plan for a bungalow. What height would you have reference to and how much lumber would be required?

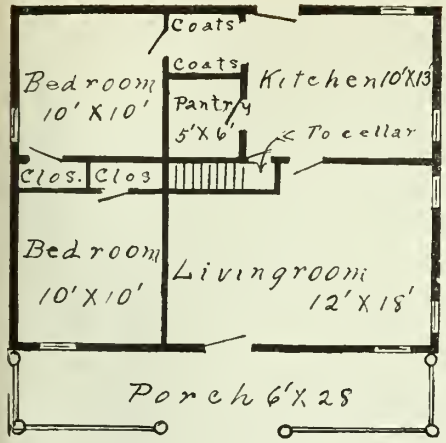
S. D. F., Ont.

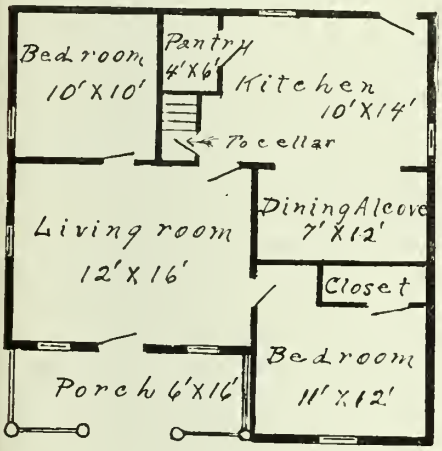
A.—The height of a bungalow of this style would be about twenty feet. We regret that we cannot give you specifications regarding material and cost. We make only the floor plans to suggest convenient lay-outs.

Q.—Could you give me a plan for a bungalow for three people with a porch costing $300 to $400, exclusive of labor?

M. M., B.C.

A.—The plans shown above will, I think, give you the suggestions you want.





A Child's Responsibilities

Q.—I am a member of the Women's Institute, and I have to prepare a paper on "A Child's Responsibilities." I have a family of eight and you would think I ought to know something about it. I think there are responsibilities both ways, but it is so hard for me to express myself in the right way, and if you could help me as soon as it is convenient to you, I would thank you very much as I think it is a good topic. Mrs. W. P.

A.—I am sending you an advance proof of an article, "The Bent Twig," appearing in our April issue, which, I think you will find to be along the line of your topic. The idea that I would try to bring out is that a child has the responsibilities and rights of an individual as soon as it comes into the world, but that because of its helplessness, and undeveloped powers it is our place to help it meet these responsibilities in the right way—not to try to mould it according to our wishes but to guide and help and encourage it to develop its own individual character. Also, the only fit way to train a child for life is not to shield it from every hardship, but to meet life squarely and take its knocks as they come, while we are with it to sort of see it safely through the dangerous places. While your paper is "A child's Responsibilities," your real object will be to bring before the mothers their responsibilities in the matter, as you have mentioned in your letter. With your experience you will be able to make this a most interesting talk.

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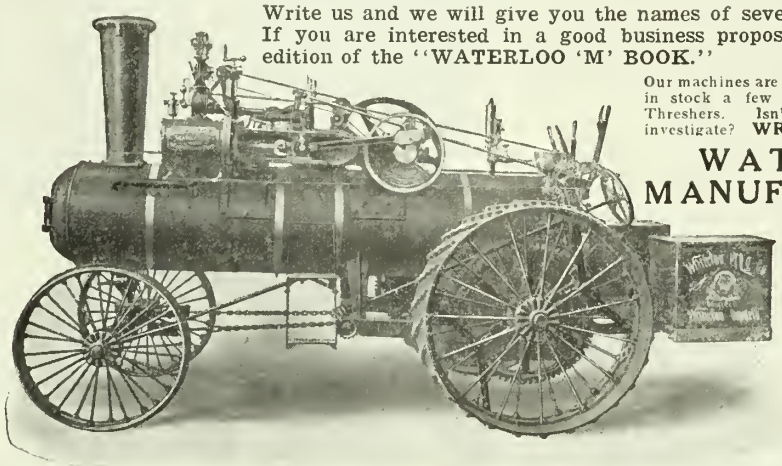

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FREE Send us a letter containing some idea of your spraying requirements and we will mail at once full particulars of a **Spramotor** that will do your work to best advantage at the lowest possible cost. We will also forward a copy of our valuable illustrated treatise on Crop Diseases, **WITHOUT CHARGE** and without placing you under any obligation whatever.

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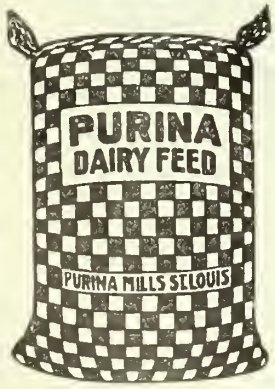

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The College and Practical Farming

Q.—Our Farmer's Club is having a debate, "Resolved that our agricultural colleges do not fit a young man for practical farming." Can you give me some instances where college graduates have made a success of farming, and can you account for so many graduates leaving the farm? A. J. McN., Ont.

A.—We can give you several examples of college graduates who are making good at practical farming, and of course we know of only a few of the number scattered throughout the country. In Durham county we know of two O.A.C. graduates on neighboring farms, one who commenced without capital, the other with an excellent financial start. Both are a credit to the college. In Elgin County a well-known B.S.A. specialist in Jersey cattle, light horses and fruit is recognized not only as a successful farmer, but as a helpful influence in the social and educational life of the community. At Frankford we have a Holstein breeder, a college graduate, who by selection of the home stock, systematic weeding out, and grading up, has built up without importing expensive foreign stock, a herd whose excellence is evidenced by the prices they bring at the annual Belleville sale. The other names given you are only a few of the men who have gone back to farming and are making it go.

Regarding graduates who do not go back to the farm, we have found that in most cases the young man hasn't a farm of his own and his father is afraid to let him try out his new ideas at home, so he starts out in some other agricultural work to earn money to start on a farm for himself. Many go back after getting some capital and experience.

THE CALL

By FAITH BALDWIN

The hard white road and the scent o' spring,
The sun and the driving rain,
The morning mist on everything,
The lure of the wanton gipsying,
Ah, lad, they are calling again!

Will ye leave the doubts, the aging care
The city streets, the stifling round,
Find ye the courage to do and dare,
Escape from the petty fears that snare,
And wander the world around?

The delicate fury of April wind,
The ever-changing, mood-swept sea,
The strange new towns where one may find
New joys that leave no sting behind,
They are waiting for you and me!

Lead—and I follow, the good earth over,
Forget the past—and live—to-day!
Loosen the fetters and play the rover,
Kiss then my lips—and be the lover;
Dance out of April into May!

Young blood is calling—I never can stay—
Will ye dare to be mine? Then come, lad—away!

—*The Smart Set.*

By GRASMERE

The busy note of farm life is being struck. With the reviving green of another crop comes the endless succession of things to be done on the farm. Only the farmer knows how insistent these are, and how much real ability is required to manage and plan them successfully. Indeed the adaptability and resourcefulness of the average Canadian farmer is what most strikes the newcomer with admiration. To farm well is no small man's task.

Too often people who do not live on the farm or have not lived there, push their advice into the farmer's business ad nauseam. Any real help that can be suggested to the farm worker in the office or field is always appreciated. In these short notes, such is the attitude of Grasmere, himself an active farmer.

We would welcome here on these pages any photos illustrating helpful farm ideas; so also would individual farm experiences with any part of farm work be acceptable. If you have a good idea, or a useful experience, send it along to Grasmere for this department. Especially helpful would it be to get from the readers the state of the crops in their several localities. Farmer's Magazine goes into farm homes in Vancouver Island on the West, into settlers' shacks 800 miles northeast of Edmonton, and across the Continent to the fine homes in Nova Scotia, and even in Newfoundland. Somebody, therefore, will be glad to hear of your part in the good old science and practice of agriculture.

The farm is the best place to be. Its success is the measure of mercantile progress, for even now, every business man has his ears to the ground to see whether the farm crops of 1914 spell better times for him. His wheels stand still until the farmer's go.

Plan for More Corn

To avoid a possible scarcity of fodder in August, plan for an extra acre of corn this year. No livestock feeder is much depressed over an abundance of feed.

The Stallion

Exercise is essential this month. Give him all that can be done conveniently. A good well-fenced yard should be used for his daily run. Feed no condiments. See that every command is obeyed.

Get Rid of the Scrub

It will not be long before all scrub stallions will be relegated to the scrap heap and farmers will do well to prepare for the future. In Ontario the recent laws will be worth your regard.

Care of Calves

Young calves should be looked after better. Calf meals take the place of whole milk. Make a few paddocks near the barn where they will get plenty of green food.

With the Yearlings

Curry out the old hair. Disinfect for lice. Trim the feet. Introduce new grass gradually. A colt well cared for the first year will go on to pasture to make records.

Stockers are High

The United States is looking for stockers in Canada. Prices are high; $7.40 is a common price. Select good growth ones and profits seem assured as the supply of cattle is low.

With the New Cow

The milk is generally good after nine milkings. The calf should get the first whole milk from the cow, but it is better not to allow the calf to suck the cow at all. Feed a warm bran mash as soon as the cow wants to eat and give some warm water.

Rape for Lambs

If you expect to feed a large number of sheep and lambs, plan for sowing a

Experiments With Crops

and actual results have proven that "STONE'S" fertilizers will revive your worn-out soil and increase the yield of your crops 65 per cent. more than unfertilized soil yields per acre.

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few acres to rape this year. It will not be ready for seeding till late in the month or even in June, but the land can be worked well to kill weeds and get it into good tilth.

Farm Management

There is no feature of farm life that is attracting more attention than that of farm management. The successful man, with the high price of labor and the necessity of working always to the best advantage, fully realizes the value of careful planning. Plan to have work for a rainy day. Plan to have some crops that will take attention during the usual slack time after seeding. June is a good time to prune orchards.

The Brood Mare

Work and exercise her moderately. Do not strain or overload her. If inclined to swell on the legs and body work is the best remedy. Keep her bowels loose with bran. Remove the shoes from her feet. Be on hand when the foals arrive, but do not worry her by too close attention. Disinfect all stalls and sweeten with whitewash. Joint-ill rarely comes in clean stables and from healthy mares.

Hogs and Pigs

Give the sow and the fattening hogs a square deal. They like good food, clean beds, sunshine and lots of pure water. Spray them and the pens with a good coal tar dip. Arrange a bar around the farrowing pens to prevent the sows lying on her young pigs. The Ontario Government is starting a hog-feeding contest and every young lad should inquire about it. There is money in hog-raising.

With the Sheep

Those who arrange to have their lambs come on grass, generally have little difficulty and few losses. Sheep that have been fed well during the winter with oats as the main grain ration generally raise strong lambs. Much feeding of roots during the winter is decidedly bad.

Shear as soon as you can. It hardly pays to wash the sheep. Sort your wool and write the wool dealers for quotations. Lambing results have been fairly good over the country this year. Prices for sheep this season will likely advance.

Care of Milk Cows

May is a trying month on the dairymen, and he is a good feeder who keeps his cows contented in the yards while the grass is calling them. If cows go out to pasture, introduce it gradually. Do not turn out till well on in the month. Do not stop meal feeds. See that stables are spotlessly clean. Watch freshening cows for milk fever. This can be successfully treated by the farmer himself now. Keep records. The dairy breeds are bringing the money because they are making good. A pretty cow is not always a paying cow.

Nurse Your Pastures

The Canadian farmer, especially in the older provinces, must take better care of his pastures. Do not turn stock on too early nor when soft weather allows the sod to be cut up by the animals. A coat of manure applied during the winter has improved returns very much. A good permanent grass seed mixture consists of: 3 lbs. timothy, 2 lbs. red top, 2 lbs. mammoth red clover, 2 lbs. alsike clover, 1 lb. white clover, and 2 lbs. of either meadow fescue, orchard grass, or brome grass. Many seed much heavier than this, even up to 20 lbs. per acre.

With the Working Horses

Watch all harness for irritation spots. Clean the muddy feet, rough coats and sweated shoulders daily. Do not turn the work horses out to pasture this month, even at night. Feed some oil-cake or molasses meal, and bran. Be careful about musty or dusty hay. It may be a good plan to dampen it. Do not forget to water often. If convenient a sip or two in the middle of the forenoon or afternoon will help wonderfully. Give a complete rest on Sunday and slacken on the feed that day.

Salt for Animals

Keep rock salt in a box or on the pasture for the animals. It is as essential as good water. For hogs that are kept in, it is well to have a box filled with wood ashes, salt, sulphur, and charcoal mixed. They can then help themselves and many dollars in feed bills will be saved by the digestion being kept perfeet. Where dairy cows are tied in, rock salt is the only solution.

Value of Manure

The average stable manure contains about ten pounds of nitrogen, worth from $1.50 to $2.00, ten pounds of potash worth 50 cents, and five pounds of phosphoric acid worth 25 cents. Besides this the stable manure adds humus making material to the soil and carries different kinds of bacteria that is worth probably as much to the soil as the actual plant food. In order to get the most benefit to the soil from the manure it is best to allow the manure to decompose on the soil where it is to be applied.

In the Flower Garden

Re-read the articles on flowers in Farmer's Magazine, by Prof. Hunt in the March number, and also for annuals in the February number. It is a good plan to keep "Farmer's" on file so you can refer to these articles when you wish. The proper knowledge at the right time means dollars to the farm purse.

Use plenty of cow manure in the rose bed. Bone meal is especially good. Roses like compact soil and after digging it should be tramped.

What About the Roofs?

Old wood shingle roofs will need repairs this month. Do not allow leaks to decay the timbers underneath. If a new roof is needed, why not try metal asbestos or the tar paper roofs? These are all making good. It is satisfying to know that your roof is sound when a rain storm comes. A metal roof properly connected with the ground is a guarantee against lightning damage. Add a weather vane to your barn roof, also a

ventilator. Good ventilation protects both livestock and buildings.

Fencing

A few days in May will be found necessary for repairs of fences and the building of new ones. Nothing adds more to the peace of mind of the farmer than the knowledge that his livestock have to stay where he puts them. In building new fences woven wire is the only thing now. Posts should not be put over 25 feet apart and the greatest care taken with the brace posts. Cement posts as well as iron posts are coming into use in some parts, but as yet the good old cedar post is filling the bill. Ornamental wire fences and gates are used for decorative purposes. The old rail fences are slowly going to the wood pile.

Plant Trees

The absence of trees on a farm east or west, is deplorable. Man is a destructive animal. Only a soul reconstructs. Building up a landscape is a noble work. Many young farmers seem to hate the presence of a commanding elm, pretty maple on the cross fence or beautiful poplar or willow bluffs. Their vision is distraught by the apparent lust

A well-trained three-year-old pure bred drafter.

for gold. But it is gold to encourage trees and he who cuts down shade trees to save soil food for his grain is doing the opposite, for trees like birds add to our fortunes. Plant in all the provinces this month. Evergreens must not have their roots dried at all. Mulch all trees well. Cut back leaf and limb growth on maples and other deciduous trees.

What Fruit Takes From Soil

An acre of apples, producing 360 bushels removes from the soil 24 lbs. of nitrogen, 2 lbs. phosphoric acid, and 34 lbs. of potash, all valued at $5.74. An acre of pears yielding 335 bushels removes 16 lbs. nitrogen, 5 lbs. phosphoric acid and 14 lbs. of potash, total value $3.60. Grapes harvesting 8,160 lbs. per acre contain 13 lbs. nitrogen, 5 lbs. phosphoric acid, 22 lbs. potash, worth $3.61. Peaches yielding 335 bushels contain 8 lbs. phosphoric acid and 10 lbs. potash. These figures show plainly a preponderance of potash. Potash may be supplied in wood ashes, old bones and animal matter are also valuable fruit fertilizer.

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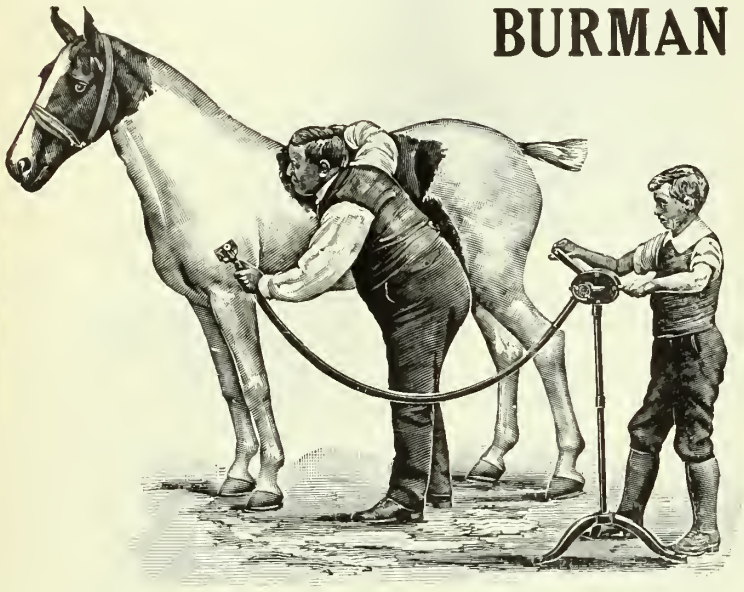

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Preparing for Corn

Many of the most successful farmers spend extra time in preparing a corn seed bed and in cultivating to kill weeds. A good seed bed induces growth so much better that often a later sown crop overtakes the earlier and beats it out. Cultivation is as good as manure. It is because the preparation of the soil allows the chemical action to put the plant food into digestible shape.

Big corn fields are appearing in Alberta and silos are getting northward even to the Edmonton district. The wonders of the Peace River as revealed in the articles in Farmer's are surprising many. Try planting some sweet corn for the stock and silo and see how it is relished.

One farmer plows and harrows the whole field. Then two or three days before planting time he runs a disc harrow over. Then a harrow follows, which shakes dirt from any weeds or sods.

Corn of weak and strong varieties after a three weeks' germinating test.

The cheapest cultivation that corn gets is before it is planted.

Soften Paint Brushes

To soften paint brushes which have become dry and hard, heat as much vinegar as required to the boiling point, immerse the brushes and allow them to simmer for ten minutes; then wash in strong soapsuds.

With the Bees

As fruit bloom increases it is a good thing to look over the colonies, and if the tops of the brood combs are capped with new white cappings, and reasonably full, then it is time to put the storage supers on, whether for comb or extracted honey, that the bees may get into the habit of going into them and be ready for the later flow from honey.

Bee keepers can easily double their profits, for honey is being recognized as

an article of food and not enough is being produced in Canada.

Be on the alert for swarms from now on. All queens should have their wings clipped to prevent the swarms escaping.

The Weaned Pigs

After weaning the pigs it will be well to get them on to an inclosed pasture of alfalfa or red clover as soon as possible. Build moveable fences and shift the paddocks often. It makes for cheap pork.

Rhubarb Values

Rhubarb is one of the earliest vegetables which we look forward to in the spring. It will start to grow almost as soon as the frost is out of the ground, and it has an acid which is very beneficial and seems to be just what we need. Plant some this year.

The Gasoline Engine

Those farmers who have invested in a gasoline engine cannot be persuaded to do without it. A good clearing and overhauling will be a good thing now. Study its mechanism. They are simple. If you haven't one plan for one now. They pay their way.

Wyandottes Not Orpingtons

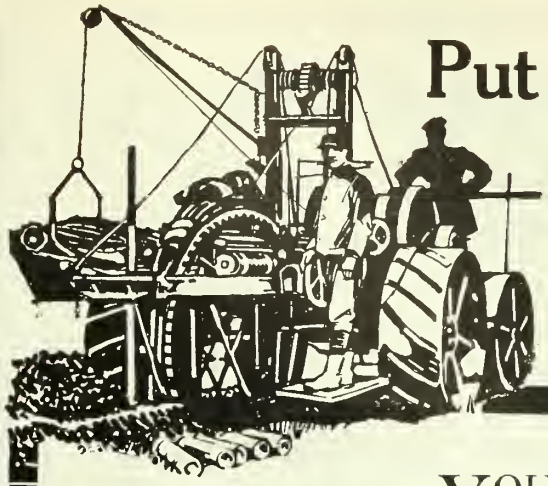
In the March issue of Farmer's Magazine an article by Marion S. Hill appeared under the title of "Making Money With Orpingtons." This should have read "Making Money With Wyandottes," as Miss Hill specializes and is making an enviable name for herself with that breed.

Get a Farm Camera

More livestock would be sold at better prices, more produce sent by parcel post if a camera were at work on the farm. A nice picture of your produce would give the buyer a favorable impression. There are opportunities here for the live farmer. A camera also records this season's work on the fields and among the animals for use next year. Cameras are cheap and easy to operate. Try it now.

Clean Up Back Yards

Although the first Friday in May is set aside for Arbor Day, too many disregard it. A general cleaning up day on the farm should be taken by all the men. Do not leave it to the women and boys. Nothing pays such dividends as tidiness. Disinfect with some good preparation all sour places in the soil. Stop throwing waste water and rubbish around the back door. Some farm back yards are positively filthy and breed all sorts of disease germs. Many a child dies from diphtheria or other virulent disease because of nearby breeding grounds for germs. Burn all rubbish. Use lime and chloride of lime freely. It is cheap. There is no need of dirty places in God's great out-of-doors on our farms. The tin can evidences of prairie shacks are nothing to be proud of. A prairie shack can be as spick and span around it as an older farm house. For goodness' sake be tidy. Even many old bachelors are models of home neatness.



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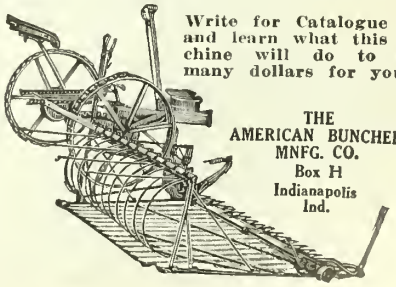

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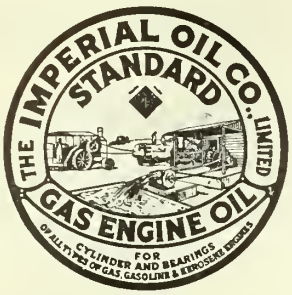

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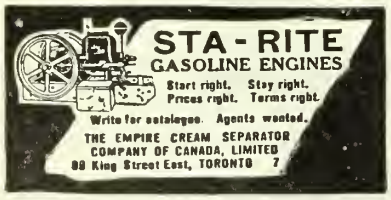

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Repair the Binders and Mowers

Do not leave off the getting of the haying and harvesting machines in shape for business. Perhaps the hayfork, rakes, loaders, and wagons need some repairing. It is wise to do it now.

New Breaking

Prairie seeding will go on during the whole month. Prairie sod broken up and sown even to May 25th will give good returns. Plow three inches deep where not brush land and then make a good seedbed with a disk harrow.

Tile Drains

Now that the Government has put ditcher repairs on the free list, there ought to be a big increase in ditching machines in Canada. Many a man could make big money by investing in a ditcher to do the neighborhood work. Plan to tile drain the farm this year. Nothing in the line of improvements pays bigger returns. Be sure to use a big tile as the leader. Every four rods on a wet field may be needed for a branch. Build a concrete outlet for the drain.

Paint Insures Against Decay

Paint your buildings this year. It saves them for several years and adds hundreds of dollars to the value of the place. Prepared paints are now so well mixed and guaranteed pure that all there is to do is to wield the brush. Barns and outbuildings need another coat and some dark days at the end of the month will be a good time to do it. Fences and gates, especially wire gates need retouching before the rust uses them up. Many implements are the better for repainting. These can be done by the hired labor on wet days.

Again don't let your wife scrub out her soul on that unpainted kitchen floor. Send the men in for half a day and paint it.

With the Poultry

Kill or sell off all the males from the laying flock of hens after the hatching season is over.

Keep the colony houses in the orchard. The chickens should later be put in the corn-fields where they will hunt an honest living.

Broilers intended for the early market must have plenty of run and get lots of grain feed.

After the goslings come, keep them in a dry place for a few days and house during storms. By the end of the month they will take care of themselves. Goose money is clear gain.

Ducks intended for the early market must be rushed along in closed yards. The most money comes by selling them at 8 weeks, where a good hotel market can be secured. They do not need running water. Move their pen every few days. Feed liberally with mashes and grain and green clover. A good plan is to have a big broad pan of water into which feed is thrown. Watch them and learn how nature does it.

Duck farms near the big cities of Canada have a big opportunity to make money.

Note the Indian Runner duck article in this issue. They are better layers than Leghorns.

The breeding ducks need very little grain if they have a run of the creek flats.

Study the turkey article that appears in this issue. Turkeys at Thanksgiving are generally scarce.

Get an egg circle started in your vicinity. Gather the eggs regularly and guarantee them fresh to the buyer. The stolen nest is an abomination of the trade.

Why not try the carton method of selling dozen lots of eggs to town consumers by parcel post? Get on to the game before your neighbor does. There's a big living in poultry.

Plant Melons

After the 24th of May will be time enough to plant water and musk melons. Do not plant in raised beds as they do not hold the moisture. Read the Garden article in this issue.

Setting Out Tomatoes

Beware of cut worms. Set plants in a burdock leaf or paper. Pour salt lightly on the soil. Do not set out long slender plants. They will die after your trouble.

Grapes and Potatoes

Grapes and potatoes, bordeaux mixture should always be used instead of lime-sulphur. For potato beetles most men will get better results from Paris green than arsenate of lead. Use from 1 to 2 lbs. Paris green to every 40 gals. of bordeaux.

Peaches

If peaches receive a second application, paste arsenate of lead alone, 2 or 3 lbs. to 40 gallons of water, should be used when the fruits are formed and about one-third of an inch in size. The object of this application is to control the plum curculio, which attacks the peach.

Plums and Cherries

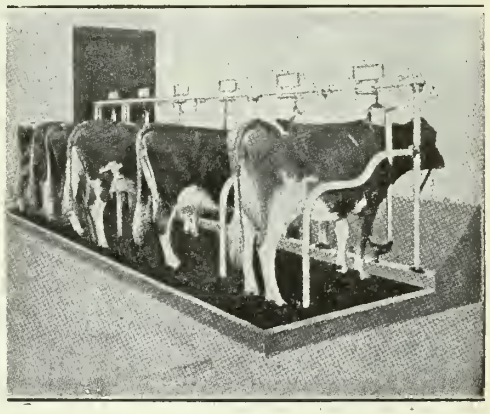
The second application for plums and cherries should be in about a week after the blossoms have fallen or as soon as the fruit is well set. The same mixtures should be used as for apples, but in the case of Japanese plums and possibly sweet cherries, the lime-sulphur should be a little weaker.

Spraying for Fruit Pests

L. Cæsar, B.S.A., of the Ontario Agricultural College, Guelph, recommends the following spray mixtures:—

For the second application on apples and pears, which should be just before the blossoms begin to open, the earliest varieties being sprayed first, either lime sulphur of the specific gravity strength of 1.010 or 1.009 which is equivalent to the commercial diluted not more than about 1 gal. to 30, or bordeaux mixture 4:4:40 should be used as the fungicide, the latter being given the preference. To each forty gallons of either of these

They Solve the Floor Problem And It's Easy on the Feet



Dairymen and stock raisers the country over are modernizing their stables with sane and practical floor covering. They realized that wood was unsanitary, rotted quickly—often diseasing the hoofs of the Animals. Cement floors are too cold, hard and slippery.

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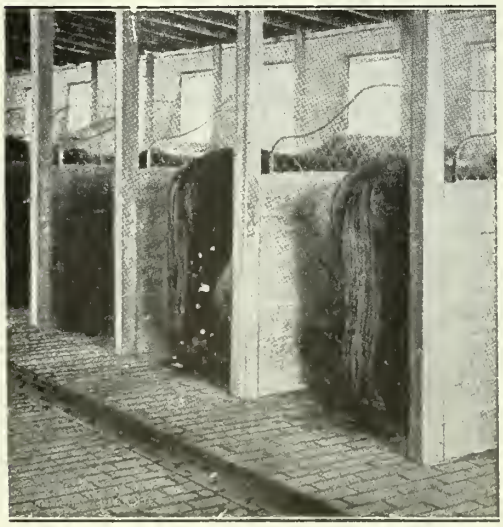

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The Kent Company Limited

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Montreal, P.Q.

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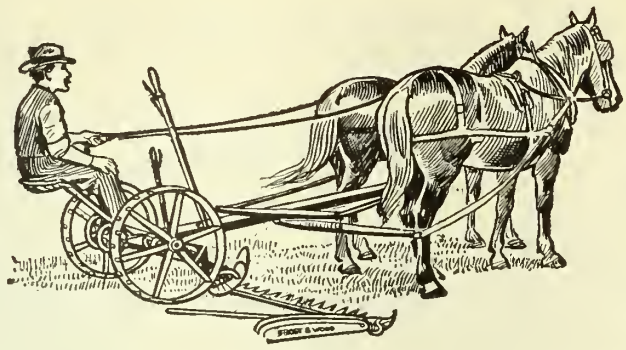

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The cutter-bar of the FROST & WOOD MOWER is driven by internal gears. "Lost motion" is completely done away with—tooth-wear and friction reduced to the lowest point. Roller-Bearings at every vital point make this MOWER unquestionably the easiest-running machine of its kind on the market.

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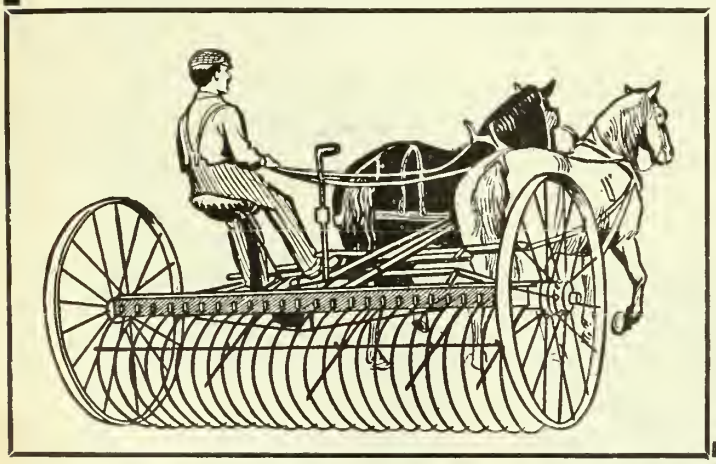
The FROST & WOOD Rake is built to last a lifetime—even with the most strenuous usage. Angle-steel frame—steel, staggered-spoke wheels—staunch steel axles—spring-steel teeth—that's the way we build the FROST & WOOD for SERVICE. All parts are riveted; they won't fall apart like bolted parts.



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mixtures 2 or 3 lbs. of paste arsenate of lead should be added as a poison.

To prevent apple scab this application should be done very thoroughly and as near the time advocated as possible. Many tend to overlook the importance of this spraying but after such a bad season for scab as we had last year the greatest care should be taken this season.

The Third Spray

The third application for apples and pears should be, especially in the case of apples, as soon as from 80 to 90 per cent. of the blossoms have fallen beginning with the earliest varieties. By this time the bees will have almost abandoned the trees and gone to other flowers. For this application it is not advisable to use bordeaux mixture for these fruits as it often causes severe russeting, instead I prefer lime-sulphur of the strength of about 1.008 specific gravity, which is equivalent to 1 gal. of the commercial diluted to from 35 to 40 gals. To every 40 gals. of this diluted mixture 2 lbs. of the paste arsenate of lead should be used. More than this is not necessary but does no harm. This is the great application for codling moth and apple scab and the trees cannot be too thoroughly and properly sprayed.

For cherries and plums the third application should be about two weeks after the second and the same mixtures as for the second may be used.

If the weather in about ten days after the third application is cold, dark and wet it will be absolutely necessary to give a fourth application for apples and pears with the same mixtures as for the third.

The Fourth Spray

Cherries should receive a fourth application with the above mixture or bordeaux as soon as the fruit is off to prevent leaf spot. Plums that are inclined to rot should be sprayed as late as possible without danger of staining the fruit for market, either lime-sulphur or bordeaux being used. Peaches may receive an application of the so-called self-boiled lime-sulphur about one month after the blossoms fall to ward off brown rot.

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Your fingers do not touch the soap. You grasp it by the metal cap in which the stick is firmly fastened, rub it gently over the face, which has previously been moistened, and then return the Shaving Stick to its nickeled container.

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Scrub with brush or cloth and take up clean. For general kitchen use sprinkle the powder on cleaning cloth or rag
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THE FARMER'S MAGAZINE

June
1914

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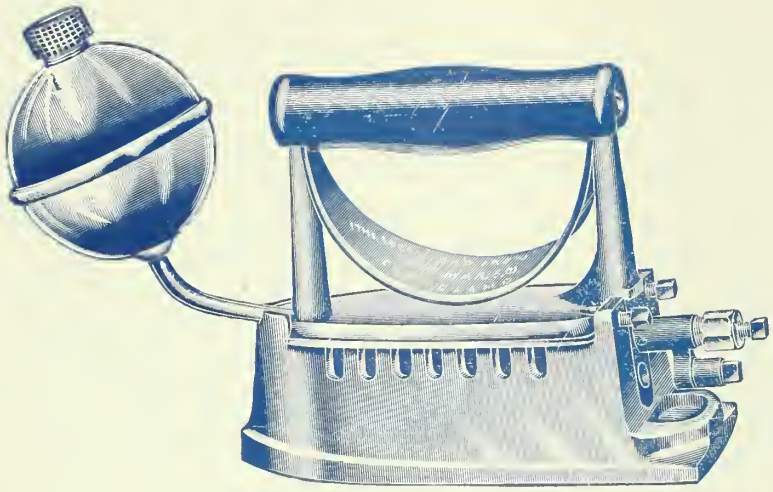

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MACLEAN'S MAGAZINE

143-149 UNIVERSITY AVENUE - TORONTO

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The Holder-Top permits you to use the stick down to the last available bit with perfect ease and convenience.

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POWDER

CREAM

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for a miniature trial package of either Williams' Shaving Stick, Powder or Cream, or 10 cents for Assortment No. 1, containing all three articles.

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Combine Quality, Durability and Utility

We have been pointing out, in the past few months, a number of the special features of PEDLAR'S PRODUCTS, and especially of the big "George" and "Oshawa" Shingles. How these shingles render your buildings proof against fire, wind, snow and rain. How they will outlast the building and the builder.

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FARMER'S MAGAZINE

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JOSEPH McGOEY, B.A., Manager
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JUNE, 1914

F. M. CHAPMAN, B.A., Man. Editor
ETHEL M. CHAPMAN, Assoc. Editor
J. I. CODDINGTON, Ph.B., Cir. Manager

THE MONTH AHEAD

July, the midsummer month, will have some choice matter.

Farmer's Magazine has to thank its many friends for their encouraging words and quick renewal responses.

Being the best illustrated farm journal in the world, and the quality of the articles being kept up, is evidence enough to any subscriber that he is getting what he has long wished for, —a high-class, dignified Canadian farm paper.

July, the month of the Midsummer Nights' Dreams, will be a wide-awake issue. The articles are full of meat, and as in each issue, there is more than is expected, a careful note of the contents will astonish the reader with its scope and value.

Following the Cattalo article in this issue will be one on the Buffalo and his usefulness in our parks.

The Electric Spark is the subject of the next article in the farm power series.

Hail Insurance in Saskatchewan and what it is doing will be discussed by a well-known writer.

$16,000 in poultry orders is the astonishing statement of a man whose ranch is being described in the July issue.

Alfalfa and dairying built the Richardson farm. This is a useful account of a successful farm by a member of the staff.

The hired man on the farm, is discussed by a writer whose name has often appeared in Farmer's.

Besides this, milking is dignified by our Peace River writer. Apple producers tell of prices. Clover seed as a commercial success in Canada is discussed.

Women's Institutes will get much of interest. The associate editor is a Women's Institute lecturer and is thoroughly in touch with farm women. Be sure to see this number. Do not lose Justus Miller's story about Land O' Gold. It is fascinating as it goes on.

The following letters are not out of the ordinary, but are samples of letters being constantly received from subscribers. They give an idea of the way Farmer's is regarded by those who know it best:

Enclosed find Two Dollars ($2.00) for another year's subscription to the Farmer's Magazine, and in doing so must congratulate you on your efforts to make it, as it certainly is, the best book for the farmer.

Wishing you continued success.

S. V. J.
Oro Station, Ont.

The Farmer's Magazine is to my full satisfaction, the best magazine I ever read.

Owlseye P.O.,
St. Paul De Metis, Alta.

Enclosed you will find Postal Order for renewal to the Farmer's Mayazine. I also wish to state that I highly appreciate your magazine; it is the only magazine I read and I read every article and always look forward to the next issue.

G. B. J.
Woodland Ranch, Vernon, B.C.

Enclosed please find the sum of $2.00 for renewal of the Farmer's Magazine. I appreciate Farmer's Magazine and constantly look forward to the next issue. I would like to suggest an information sheet as a good addition to the magazine.

Wishing your magazine a very large increase in circulation, I am respectfully,

T. H. B,
Thornton.

Enclosed you will please find Money Order for $2.00 as per your statement which I have just received. Your magazine is one that is always welcome and I take several different farm journals,

R. E. T.,
Windsor, Ont.

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During 1913 the prices on Goodyear No-Rim-Cut tires dropped 23 per cent.

There are numerous anti-skid tires for which you are now asked to pay far more —here in Canada, as well as in the United States. So the question comes: Is any tire **worth** more than Goodyears?

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In several ways No-Rim-Cut tires are the costliest tires that are built. They are so costly that, when our output was smaller, their price was one-fifth higher than other standard tires.

They are the only tires which are final-cured on air bags shaped like inner tubes. This is done to save the countless blow-outs due to wrinkled fabric. This extra process adds to our tire cost immensely—an extra cost which no other maker pays.

They are the only tires in which hundreds of large rubber rivets are formed to combat tread separation.

They are the only tires made in a satisfactory way so that they can't be rim-cut.

They are the only tires which carry our double-thick All-Weather Tread.

The Mileage Limit

No-Rim-Cut tires, on the average, give the limit of possible mileage. We say this after years of research and experiment, which have cost us $100,000 per year.

Goodyear experts in these years have made thousands of attempts to build tires that give more mileage. They have tested the new tires against the old in every way they know. And they say that Goodyear tires mark to-day's mileage limit.

Where We Save

We save by mammoth output, by efficiency and by modest profits. It is thus we give you tires like these, at present Goodyear prices.

Men have bought, in the past two years, more than three million of them. Bought them because mileage records had proved them the best tires built.

It is easy to build tires worth less than Goodyears, but men can't build a tire worth more.

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TORONTO

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With All-Weather Treads or Smooth

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Wide machinery with strong horses insure good work. The implement shed and the clean yard are evidences of business sense on this farm.

The Ministry of the Soil

Labor-saving Machines, Pure-bred Livestock, the Auto and Family Co-operation Make Young Men Farmers by Choice

By ANDREW McTAGGART

Perhaps there is no better example of loyal co-operation and successful business farming than that which is described by Mr McTaggart in the accompanying article.

At the request of "Farmer's Magazine" he paid a visit to the farm and delved into the question of why these boys remain on the farm. He has shown so many things that will be of intense interest to every reader of the magazine. While Mr. Watson may have made mistakes one way and another, as everybody is bound to do, yet the success of his work is largely due to his right ideals in regard to the farm home partnership. He is making money on his farm and they all enjoy the work.

IT is a satisfaction to those who believe in agricultural pursuits to find a farm that has succeeded in keeping its sons farmers by choice. Professional life for them has no inducements. Farming is a big man's job. The problems invite their solution and the joy of conquest is satisfying.

Charles Watson, a Scarboro' farmer in Ontario, has made a success of the mixed farm, with a sideline on Holsteins. And his boys are real partners in the expanding business.

If you ask how he has done it, you will find the answer along the lines of his being a hard worker, and in the fact that he has made a special study of farm dynamics. He does not believe in doing anything by hand that can be better done by horse power. Further, he does nothing by horse power when gasoline can be made to serve his purpose any better. His idea is to make use of all the power that he can. His wish is to reserve human energy for the purpose of doing hard and systematic thinking. He has found out that neither man nor boy can do their clearest brain work when they are tired to the point of exhaustion. He is now looking for the day when electricity will supply the motive power for all farm operations. Till that day comes, he is making the best use he can of the power that is now available.

THE BOY AN ASSET.

But when we have said this, we have not really touched the secret of his success. He made his big find the day he discovered the value stowed away in his developing sons. Like all farm boys, they were interested from the start in the things they saw their father doing. This interest Mr. Watson saw the wisdom of developing. There is no use in the world of scunnering a boy of farm work by giving him the bulk of the uninteresting, dull, mechanical features thereof to negotiate till his expanding life finds the whole thing dull and hard and hateful, and then to try to "awaken" interest in a business that the boy associates only with thistle "jegs" and backache and stone bruises and blistered hands and feet. This way of doing things has been tried and has proven a failure. The boys with whom it has been tried will tell you that for them there is no place like the farm, and add with a grin that that is the reason they keep as much distance as ever they can between it and all that pertains thereto. Not that boys shrink from hard and even monotonous work at times, but no boy who has a grain of spunk in him will submit to being a mere bit of farm equipment, even when that equipment belongs to his father.

Mr. Watson saw all this, and made up his mind that his boys were human beings and that they must be treated accordingly. His plan was to make them real partners with him in every interest of the farm. This partnership was no imitation of the real thing, but a bona-fide partnership in council, in labor, in interests, in financial gain and loss. As soon as the boy knew where he was at at all he was made a sharer in what was going on. The boys and the father became chums and partners

Animals while exercising are kept under observation. These Holsteins are money-makers. Note the good stable with its equipment.

in farming—the primal and underlying business of all mankind.

BOYS—PARTNERS.

One is not surprised, then, to find this farm a model of neatness. Mr. Watson will be the first to discount this statement when he reads it, for he is already projecting plans for improvement. At the same time, one cannot but be pleased with the neat farmyard. The manure yard is carefully fenced off from the farmyard, hence the neatness of the farmyard and the suitability of the barnyard for purposes of exercising the young horses and the cattle without imperiling the condition of the rest of the premises. Nor is one surprised to find that the stables of this farm have the record of being so cleanly that not long ago their owner invited his friends to a lunch he had provided for them in the passage-way thereof. The avidity with which the viands were disposed of was the best possible proof of the sweetness of the atmosphere and the spotless purity of the environment. Every member of the herd of cattle in these stables is groomed to the last hair. Whitewash is used without stint, and the ventilation leaves nothing to be desired. These byres have a degree of cleanliness that can be had only when all hands are keen on their job, and this happy condition can be had at its best when father and sons do the work in partnership.

HOLSTEINS ON COMMON-SENSE LINES.

Speaking of this fine herd of Holsteins, Mr. Watson is not keen to establish records in the ordinary sense of the word. His aim is to have his cows a permanent source of revenue. He is not anxious to have his cows do specially well for one month or for one year. Rather, he aims to have them do well for him for a term of years. He is careful to build up a vigorous constitution in each of his cows and in this way keep them at a high point of efficiency. No forcing is attempted. The result is a herd that is singularly free from any form of constitutional weakness.

The animals are exercised regularly. To be more accurate, the animals are turned out into the barnyard for their frolic. And this frolic is good to see. "School's let out!" is acted and capered by this vigorous stock as sportively as a room full of schoolboys bent on a holiday. Good health, vigor and the joy of living are in evidence in every move of these splendid animals.

But while the animals are exercised regularly, care is observed to do so judiciously. The modern stable is warm to the point of comfort. If, then, the stock is left out even for a few minutes beyond the time when they exercise freely, they will suffer discomfort and run the danger of contracting cold, with all its attendant horrors and loss. No difficulty is experienced in getting the animals in in time to avoid serious consequences, provided the stable is ready for them to enter of their own free will. Animals while exercising are kept under observation, and in this way a deal of trouble is avoided that would otherwise be inevitable. As a result of this constant oversight, Mr. Watson's herd has escaped those ills that are due to lack of ventilation and lack of normal condition. He is not of the class of stockmen who regard their animals as machines and whose one aim is to make a record in quick time, to be followed by a quick sale. He began with a few cows in which the dairy type was the main consideration. These were selected from pure-bred stock of good reputation. Since then he has kept at the head of his herd a first-class sire of excellent dairy record.

The present sire is the pure-bred Holstein Friesian, Sir Segis Calamity, sired by Sir Lyons Hengerveld Segis. His dam was Blanche Lyons DeKol. This dam has the record of 33.31 lbs. of butter in seven days, being one of three sisters each of which has made over 33 lbs. of butter in seven days.

Within two years Mr. Watson has sold twelve females for an aggregate sum of $2,500.

DRAINAGE HAS PAID HIM.

A fine bit of work has been done on this farm in the way of draining. When the present owner came into possession there meandered through the north-western thirty acres of the farm a creek that was useful mainly as a means of keeping the farmer from getting his seed in over early. This creek was about as crooked as a creek could well be. Naturally the fields through which it ran were wet beyond all possibility of profitable agriculture. This creek has been transformed into a straight open ditch. Into this ditch six-inch main tile drains have been opened. From these main drains smaller drains lead out. The result has been that this field has been made one of the best on the farm. The old bogginess has been removed. Late though this season proved to be, the oats sown in this field were well sprouted by the first of May. Instead of being an eye-

Mr. Watson's auto. It is not reserved for state occasions, but is looked upon as part of the farm equipment.

Chas. Watson and his two sons. The elder of whom is Secretary and General Manager. The younger is the Finance Minister. They are seen with their prize horses in front of the big barns on the farm.

sore, this field yields fine crops every year.

BELIEVES IN CEMENT.

Another piece of fine work that attracts attention on this farm is the manner of placing the gate and corner field posts. For these a hole is dug about four or five feet deep and about thirty inches square. The cedar post is carefully soaked in water, notched about two feet from the bottom and about eighteen inches from the surface of the ground. This post is then set in concrete, care being taken to leave the surface of the concrete well rounded in order that it may shed the water readily. The concrete is continued two or three inches above the surface of the ground. The second post is also set in concrete. These posts are models of solidity and give promise of being preserved against decay. To prevent heaving from frost, the post hole is made considerably wider at the bottom than it is at the top. In this way the best kind of anchorage is provided. Cement is freely used on this farm, as it has a solidity that cannot be got in any other way, convenience being taken into consideration. For instance, Mr. Watson and his boys have constructed out of cement a fine outfit for boiling water and feed.

Everything on this farm is suggestive of completeness and convenience. An eight-horse-power engine does the water pumping, the grinding, runs the cream separator and does the root pulping, to say nothing of the straw cutting and the cutting of the hay for horse feed. The feed is mixed once a day, and is so situated that every animal on the place can be fed in less than ten minutes. A litter-carrier makes the stable cleaning the reverse of a heavy job. A swinging jack makes it possible to cut hay or straw in any part of the barn with but little carrying. Conveniently situated chutes make it the easiest thing in the world to get the cut feed before the cattle. Two cement silos, twelve by thirty-two together with an abundance of roots in a handy cellar, supply an abundance of succulent feed for the winter months.

Mr. Watson's method of corn culture is worthy of attention. His practice is to select the poorest field on the farm in regard to fertility for his corn crop, though his poorest field is, to say the least, in good condition. This field is thoroughly plowed and very heavily manured. The corn is planted in hills with a horse corn planter, in such a way that it may be cultivated two ways, by the two-row cultivator. In addition to this, the corn is gone through with hoes in order that no weeds may be given quarter. In this way the field is brought up in point of fertility and cleared of weeds. It is interesting to learn that Mr. Watson rarely misses a good catch of clover after his corn.

Speaking of the completeness of this farm's equipment, the blacksmith and repair shops must not be overlooked. In these shops the farm implements are repaired and, when it is required, reconstructed. In this way many a breakdown, with accompanying annoyance and loss, is prevented. Worn parts are detected and replaced, while many a new part is made outright. These shops have added years to life of the farm machinery, to say nothing of the relief that comes to repairers from a change of work.

RUNNING ON SCHEDULE.

While this farm accomplishes a great deal in the way of work, there seems to be an absence of haste or excitement about getting things done. Work is done, and done on time, but there is no nervous waste about it. The secret is a good system well worked. Each has his work and the equipment necessary for its being done. The horses are powerful animals. The capacity of each is well known, and while no one is overworked, he is kept nearly up to his capacity. The three-horse harrows and cultivators, the wide-cut mowers and binders, accomplish everything with an ease and a speed that make light work of and quick time at heavy jobs. It is an example of farming reduced to a science. Long hours are the exception. The inconveniently early rising that so many associate with farming has on this farm been proven to be neither expedient nor necessary. The choring, the bugbear alike of fun-loving boys and hired help, is done with a system and a facility that robs it of its leg-wearying spirit-killing terrors.

Those who are filling the air with their dismal wailing that country life is on the decline will do well to visit this farm. A fine combination of clear thinking and the steady application of right principles has made this farmer and his boys part-

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Finding Their Level

The Shifting of the Unfit and the Desire to Improve Made Some Farmers Move. Their Mistake is Growing Upon Them

By TOM E. DOBBIN

The writer of this article has little sympathy with those persons who are forever lamenting the forsaking of the farm by the rural people. He argues that a great many of them are better off somewhere else than on a farm, and that the farm is better without them. Perhaps he is right; at any rate, his plea for independence and backbone is worthy of serious attention.

A GREAT deal of pother is being made by some people who have a passion for figures regarding the decline of rural life in older Canada. These statisticians point out that the cities and towns of older Canada are steadily increasing while the rural population is as steadily declining. All manner of inferences are drawn from these figures and it is pointed out that "unless something is done to remedy this state of things" that the day of disaster is already at Canadian doors. With a pathetic belief in the Government as a cure-all these harbingers of calamity declare that the rulers of the present day must get busy on the solution of the rural problem.

An investigation of all the facts goes to show that things are not as bad as these figure compilers would have us believe. True, there are farmers who are abandoning the soil, but this is as likely to demonstrate that country people are alive and thinking as it is that agriculture, the most ancient, as it is the most important of the arts, is proving a failure.

In the first place, many farmers are leaving their farms because they find that they can do better in other walks of life. But grocers leave the grocery business for the same reason, and no one makes any complaint. Further, many farmers are leaving land that should never have been occupied for agricultural purposes. Again, many farmers find that they have settled where they cannot carry on their specialty in farming to advantage. These two classes are very properly making a move for situations where they may accomplish better things. In both these instances when forest and stream supplied them with the great proportion of their food, and the standard of living was relatively at a low financial standard, they eked out a living and were relatively contented. With the passing of pioneer conditions, however, the standard of living rose rapidly and the drain on their financial resources became greater. Meanwhile the land did not increase in productiveness and the farmer-settler was obliged to find soil that gave him larger returns. At this juncture came the industrial expansion of the past twenty years. Towns and cities called for the sons of the farmers and settlers. Along with the era of industrial development came what was the same thing as the discovery of the farms of the North-West. This was to many a hard-pressed farmer a perfect godsend, and he was not slow to avail himself thereof. Who blames these farmers for responding to the call of larger financial reward? When opportunity came to them to secure the larger necessities of life as well as a few of its comforts, and had this opportunity passed unimproved, there would, indeed, have been grave grounds for fears. Rather, these farmers showed that they were men of enterprise by leaving behind them the old low level of life and seeking wider spheres of enterprise. That their abandonment of their holdings has been for their own advantage, and for the benefit of the democracy is evidenced by the fact that they have made good in the new lands and occupations of their adoption. Many of these return every year for a trip to Old Ontario, and on their return pay up old debts contracted during the days that preceded their happy leave-taking of the farms that were really prison lands to them in comparison with the lands they now occupy.

WHEN THE UNFIT FARM.

Further, many of these farmers who have abandoned their farms have done so because they did not know how to farm and were not willing to learn. They exploited their natural resources and came to the day when the farm refused to feed them because they had neglected to nourish its soil. These represent the unfit and the unskilled, who never should have had access to the soil. Is it to be wondered at if these men are obliged to quit a sphere where they have showed themselves to be so conspicuously unadapted to their environment? Is it to the disadvantage of any rural district to be rid of such destroyers of soil resources, and such foes of real progress? Is not this simply civilization's way of eliminating her unfit? Such being the case, where is there any cause for calamity howling?

Again, there are plenty of farmers who fail through lack of management, just as there are plenty of men in mercantile industries who fall out through not understanding the dynamics of their occupations. There are farmers who can grow crops who do not know how to sell them. There are others who have not the knack of keeping their expenditures within their incomes. Farming will forgive bad management longer than will any other business under the sun, but the day comes when the poor farm manager must balance up and his bad business methods bear their fruit. But there is nothing in this particular that is peculiar to agriculture. It is simply the way things are. Men must in the end pay for what they get. Value must be given for value. But why complain because all this does apply to the farmer, and lament because such a poor manager is obliged to leave the land where he made such a display of his lack of business acumen?

GOVERNMENT NOT A NURSE.

Nor will it do for the Government to step in to attempt a remedy Why should the Government prove a nursing mother to the farmers rather than to the other occupations of the democracy? In the end, about all any Government can do for any of its citizens in the way of help is in the way of encouraging self-help and of insuring to each man safety in the enjoyment of the fruit of his lawful labors. It should give each citizen beneath its flag a good education, and then say to him, "There are the opportunities afforded by this land. Make good." The farmers are in swimming on equal terms with men in other occupations, and when they are handicapped by any class legislation or when law for the farmer's benefit remains unmade or goes unenforced, the fault lies at the farmer's own door. In the ballot box he has his opportunity of saying who shall make the nation's laws and who shall enforce them. If the farmer does not avail himself of his advantage in this respect, he must be prepared to abide by the consequences. If the farmer wants any ill issuing from the Government redressed he must set about it and not wait for others to do for him what his own gumption alone can accomplish. When farmers abandon the habit of grumbling and vote in view of what their business and social life demand there will be something doing by the body politic.

In agriculture as in other occupations there is a constant sifting going forward. The industrial development of the past decade has brought the farm into contrast with other occupations and in many cases country people have fancied that they have seen an advantage on the side

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The laying-pens on one of Nanaimo's many progressive poultry ranches where the White Leghorn seems to be supreme.

B.C. Eggs Average 32 Cents

The Quality Kind Will Never be Overdone in This Province Where the White Leghorn Rules

By JOHN THOMPSON

With the growth of chicken ranches in the fertile valleys of the Pacific province, there has also come into being the pessimist who says that the production of eggs will soon be so large that the producers will be unable to market them. The writer in this article shows how there is likely forever to be a market for good eggs, and points out how the individual farmer can ensure for his product a certainty of good prices.

THE strides with which egg-production has gained on consumption in British Columbia are thought-provoking. The poultry industry, when the province's marvelous growth began twelve years ago, was caught napping. Eggs had been selling by the pailful instead of the dozen. In 1906 the average price was 25 cents a dozen; in 1907 it had increased to 30 cents; in 1908 it was 35 cents; in 1909, 37 cents; and in 1910, when a real poultry boom commenced, it was in some localities, 45 cents. The value of eggs produced locally was $156,-247 in 1910, $255,112 in 1911, $1,205,-000 in 1912, and in 1913, $1,757,133. Last year for the first time there was a falling off in egg imports, and for the first time in years poultrymen complained of the prices they received. If the present rate of increase continues, British Columbia should have eggs for export in 1925.

For the breeder a poultry boom means tremendous business—for the commercial egg man it inevitably results in lower prices. Though the drop has been greater on the prairies, what has occurred in British Columbia has transpired all over Western Canada. To a lesser extent the condition is continent-wide. Tariff changes in the United States have resulted in European and Chinese importations, and an era of low egg-prices is at hand. An American agricultural expert has referred to the general situation as "The Fall of Humpty Dumpty."

This is not a "blue ruin" article, but the writer would point out the necessity for poultrymen, especially those in Western Canada, to consider the situation. Not the only way out, perhaps, but unquestionably the simplest and surest way, is to give more attention to the packing, shipping and selling of eggs. There is no danger of even local over-production of the better quality eggs and dressed poultry. Several very practical and efficient marketing plans, all emphasizing quality, are in operation. Eastern Canada has its egg circles. There are no bona fide circles in British Columbia, but poultry associations, affiliated with the B.C. Poultry Association, are very numerous, and in these in most communities the vehicle for co-operation already exists. Surrey, Chilliwack and Cloverdale are districts which stamp their eggs and market them co-operatively. Surrey has done considerable advertising, with good results, it is understood, in the daily newspapers.

The Cowichan Creamery Association, the first co-operative marketing association in the province, still stands as the most successful. Under its encouragement the district around Duncan, Vancouver Island, came to lead the province in egg production. White Leghorns are the predominating variety, and pens from the district practically swept the board at the last egg-laying contest at Victoria, sharing the honors with Chilliwack, where co-operation is also practised. Careful marketing, it may be noted, is almost invariably accompanied by increased production in the flock.

The Cowichan Association dealt first in butter. Then an egg station was established, and now the trade name "Cowichan" is known more for eggs and dressed poultry than for creamery products. The market in the early stages was Victoria and Vancouver Island. Last year it was extended to the lower mainland, and a distributing depot was established at Vancouver. Eggs are marketed in cartons, sealed, and each egg is stamped with the number of the producing ranch.

The high quality insisted upon, combined with the really businesslike marketing methods, has brought prices considerably higher than those quoted the ordinary producer. Inspectors visit the ranches at irregular intervals to see that the association's rules are being respected. The latter are thirteen in number.

1. Eggs must be gathered daily.
2. No eggs must be shipped that are doubtful, or have been covered up with straw or earth.
3. Houses, nests and general plant must be kept clean.
4. Medicated nest eggs must not be used.
5. As No. 1 eggs only infertile eggs weighing 1¾ ounces or over may be shipped.
6. Each rancher shall ship only his own eggs.
7. No fish shall be fed to laying hens or pullets.
8. No putrid meat shall be fed to laying hens or pullets.
9. All eggs must be kept in a cool, clean place, and not in contact with coal oil or any foul smells.

10. Adequate arrangements shall be made for keeping, when necessary, the males apart from the females, the time to be determined by the inspector.
11. All eggs must be shipped in a perfectly clean condition. If eggs have to be cleaned, they must not be wiped with a wet cloth nor dipped in water, but cleaned with a cloth slightly damp.
12. Fertile eggs, or eggs under 1¼ ounces, must be shipped in separated cases, marked No. 2.
13. All eggs must be marked with the correct stamp, according to the grade.

The great mass of eggs are marketed by individual producers. There is almost always an opportunity for the individual to market his eggs directly. He must take care to produce a better egg than his neighbor, which is generally an easy matter. It means producing infertile eggs, grading the eggs according to weight and color, culling double-yolked, large, small, dirty and cracked eggs, and feeding wholesome food. The simplest marketing method, and one which is often very satisfactory, is to secure several city grocery stores as cash customers.

LULU ISLAND FARMERS.

Several Lulu Island poultrymen, who are within a half-hour's ride of Vancouver, market their eggs in this way, and besides having a cercertain market get good pay for the time spent in selling. Peddling from house to house is not so common, although the writer knows of one man who has made a success of it. He has a partner in Vancouver who spends all his time going from house to house with the ranch's output. About ten cents a dozen more than in the usual way is obtained, and once a regular chain of customers, within as small an area as possible, has been obtained, the scheme begins to be profitable.

The sine qua non is a quality product. Having this, a poultryman may often work up a profitable market among the hotels and railroad companies. Very few poultrymen have looked into this line in British Columbia, though it is a trade which may be "felt out" by the poultryman quite easily. Letters addressed to the "purchasing agent" will reach the right party, but the results will be much better if personal visits are made.

A C.P.R. CONTRACT.

The Canadian Pacific Railway, a large purchaser of eggs in British Columbia, accepts tenders for the whole year at one rate, or at one rate for certain months and at another for the remainder. The company insists on non-fertile white eggs, weighing not less than twenty-four ounces to the dozen, and requires a guarantee that eggs shall not be more than four days old in summer and seven days old in winter. Eggs must be stamped with the name of the producing ranch and the words, "C.P.R. Non-fertile." The cartons, also stamped, must be put up in cardboard containers carrying twelve units. The tendered price is for the eggs delivered to the storeroom or other designated place.

"Where such catering is done by individual producers," stated J. R. Terry, chief poultry instructor, to the writer, "we have found it to work out satisfactorily. Thus far it has not been found to work so well where the eggs are supplied co-operatively. The trouble seems to be with the farmer who is keeping small flocks as a sideline. We have very little trouble with the specializing poultryman, who has to collect his eggs regularly, but it is very difficult to get the sideline poultryman to produce infertile eggs. For some reason or other, they seem to think that their birds will not lay unless there are male birds in the pen."

CO-OPERATE WITH THE COUNTRY STORE.

Co-operation between a country store and its egg-producing customers is unique, but it is eminently practicable. The Walker Emporium, of Steveston, B.C., is, so far as is known, the only store in Canada to make use of the plan.

Small poultry houses on a British Columbia ranch.

The Emporium, located in a farming community, was handling five to six hundred dozen eggs a week. It was done more as an accommodation to customers than as a source of revenue. Some difficulty was experienced in marketing this quantity expeditiously, and quite often shipments were sold to Vancouver wholesalers at an actual loss.

The following plan, benefiting both store and customers, was evolved. Instead of taking eggs from the farms in bulk, the Emporium took them in lithographed cartons which it furnished without charge. Certain rules intended to insure well-graded, good quality eggs were placed in force. Each producer was given a number, and this number was stamped on all eggs supplied. The date was stamped on the outside of the sealed carton.

Without trouble a group of stores to handle the cartoned eggs was secured. The difficulty, indeed, proved not in finding the demand but in filling it. Freight and delivery charges on the cartoned eggs were higher, and the cartons cost about a cent apiece, but the better price secured gave a profit on the additional outlay of 200 per cent.

The beauty in this scheme is that it makes appeal to the sideline poultryman, improvement in whose output is the hardest to bring about.

PLANNING LARGE HATCHES.

Let us hark back to the situation which inspired this article and which should spur every ambitious poultryman to improve his output and to market it more advantageously. So far as can be determined, the expansion of the poultry industry is continuing unabated. Poultrymen on the lower mainland are uniformly planning on larger hatches, and with better hatching weather than in 1913 their plans should not miscarry. Large numbers, thrown out of work by the financial depression, are leaving the cities to engage in poultry farming. The importation of live fowls from the States still continues. A factor which must not be overlooked is the great increase in city back-yard flocks.

"Complains were not at all infrequent the past season that the price of eggs was lower than in previous years," said H. E. Upton, poultry instructor, in a recent Government bulletin. "Of course, poor seasons will have more or less effect on the price of eggs as well as with other commodities. People on the coast and lower mainland districts should be able to make a good profit on their eggs if the yearly average is 32 to 34 cents a dozen, providing their ranch is run on a business basis. With the increased number of poultry being grown in this province, and also in the adjoining states that compete for our markets, *one cannot expect the same prices to exist that were prevailing a few years ago. We doubt if the price will ever drop below the 32-cents average, however.*"

There are reasons aside from those created by supply and demand why poultrymen should consider quality first in their business. A big fact looms on the horizon, and that is that the present case-count system, which pays for an egg as an egg, good or bad, will inevitably be discarded and in its stead substituted a system by which price will be based on quality and quality alone.

The Coming of Electric Power

Farmers are Preparing to Utilise the Advantages of the Hydro-Electric. We Can Teach the Germans

By WALTON B. PERRY

Anyone who has visited Ireland during its latest agricultural revival will have noted the peculiar animation that radiates from the young people there. Sir Horace Plunkett's scheme of co-operation and the land reform laws are opening up possibilities of small farms and intensive cultivation that are paving the way for a sturdy race of people on the land Something of the same spirit seems to leap into the eyes of the Canadian farmer when you talk to him about the installation of motors, and the purchasing of electric fluid for the lighting of his house, the running of his machines, and the carrying of his produce The writer of this article has had a personal interview with the Hydro-Electric Power Commission, and gives the readers of Farmer's Magazine a vision of the future in the series of two articles, of which this is the first A second will appear in an early issue.

"TO what proportions will this hydro-electric power development be carried" I asked an engineer of the Hydro-Electric Power Commission.

"Now you have asked a question I can't answer," he replied. "No one can answer it. What do you suppose Bell would have said if he had been asked the same question five years after the first telephone had been installed? He might have told you what he expected or hoped, but that would not have been the whole story.

"The scope of this work is broadening so rapidly that no one can say exactly where it will end. We are receiving applications almost daily from municipalities to make an estimate of the cost of supplying them with power. Why, even while we're talking there may be five on the way."

And thereupon the story was told me of a work more wonderful than the construction of the hanging gardens of Babylon and of vastly more importance to humanity.

To an engineer who devours terms such as volt, ampere, ohm, watt, with a smile as though they were as nothing, the story runs smoothly. But mere "folks" are apt to become confused by them. The lay mind usually takes off its spectacles and inquires what they're all about. So before explaining the work of the Commission, a word is necessary of electricity itself.

IN THE DAWNING.

The current, or current electricity, is a comparatively recent discovery. As early as 600 B.C. certain substances, such as amber, were known to possess electrical properties when rubbed, and it was known that a charge of electricity existed in lightning. But not until the eighteenth century was a knowledge of the current gained.

Galvani, a professor of anatomy in the University of Bologna, while dissecting a frog noticed, first, that the contact of dissecting instruments of different metals, and, later, that the discharge of an electric machine connected to its leg, caused convulsions. He attributed the result to "animal magnetism." But Volta, a fellow-countryman, professor of physics at the University of Pavia, conceived the idea that the current had its origin, not in the frog's legs, but in the contact of metals. In a series of investigations he invented the voltaic cell, which produced a current, and established the knowledge of a principle that has been immensely valuable to the human race. This invention introduced the dawning of the era of applied electricity.

The cell consisted of a zinc and a copper plate immersed in a bath of sulphuric acid (called the electrolyte) and with their tops (or binding poles) connected by a wire. The wire is called the external conductor, and it must be intact to transmit a current. The latter is supposed to flow from the copper plate through the wire to the zinc plate, and hence to the electrolyte or acid solution. The path taken by the current is called the circuit. If the conductor is parted at any point the current will not move, and the circuit is said to be open. When the conductor is intact and the connections are all in order, the current flows and the circuit is said to be closed. Hence with a closed circuit there is always a transference of energy, whereas in an open circuit there is no such transmission.

Now, in order to produce this flow of electricity, energy is required. Without going into the technical theory of the action of the cell, we may think of it as a kind of furnace in which the zinc is burned up in order to obtain electric energy.

ELECTRICITY DONE INTO ENGLISH.

I have spoken of the flow of electricity as I might of water. In some respects there is a similarity between the two; but in the former case nothing of the nature of ordinary matter moves. Nor can we say definitely just what does occur. For the present we must be satisfied to say simply that there is a transference of energy. It remains for modern scientists to more fully explain the phenomena.

Electrical pressure, as in the case of water, depends upon certain definite factors. Suppose, for example, two tanks of water, one higher than the other, are connected by a pipe. Now we know that the rate of the flow of water from one to the other depends upon the difference in the water levels and in the size of the pipe. Even though the higher tank has a much smaller capacity, the water will run into the larger one until the surfaces are level. Thus the water (or hydrostatic) pressure depends upon the difference in pressure between the ends of the pipe, the size of the pipe, and the friction of resistance offered the water flow by the pipe. Corresponding to pressure in hydrostatics we use the term potential (or pressure) in electricity, and to a certain extent the same factors influence it. If two points of a conductor are at the same potential (corresponding to two level water surfaces) there will be no flow; but if one is higher a flow will occur. This difference is measured in volts (named after Volta). The potential exerted by a zinc-copper cell may be considered to generate a one-volt pressure and is taken as the unit potential. The pressure is influenced also as in the case of the waterpipe by the size of the conductor, and the degree of resistance with which that particular metal opposes the flow.

Now, the foregoing proves that the potential is determined by two factors: (1) The difference in pressure of two points of a conductor. Hence if it is hitched to one cell there will be 1 volt potential; if to 100 cells there will be 100 volts. A dynamo generating 500 volts will give a pressure equal to that of 500 voltaic (or simple) cells in series. This electric pressure is commonly denoted by the terms "tension," "voltage," "potential," and "electromotive force". (2) The size and character of the conductor. A cell cannot send as strong a current over a long wire as it can over a short wire, nor as strong a one over a small wire as over a large one. Moreover, some metals offer more resistance to the flow than do others. For instance, a stronger current will pass from a cell over a copper wire than

over an iron one of the same length and diameter.

The laws of resistance were worked out by George Simon Ohm, a German scientist, and the unit of resistance is called an ohm after him. It is an arbitary quantity, the international ohm being practically the resistance exerted by a copper wire ten feet long and one one-hundredth of an inch in diameter.

Now having our units of pressure and resistance, we require one to denote strength of current. One volt pressure acting through one ohm resistance gives unit current. Its strength is said to be one ampere, called after Andri Marie Ampere, a distinguished French scientist, who made several important electrical discoveries. Thus if 20 volts acted through 5 ohms of resistance a current would be given of $20 \div 5 = 4$ amperes.

Let us suppose now that we have a given quantity of water to pass through a pipe. If we have a pressure of 50 lbs., more work can be done than at 20 lbs. pressure. The same truth applies to electric potential, and we have the unit of power termed the watt. This is the power exerted by one ampere under a pressure of one volt. Thus the product of the amperage and the voltage gives the power of the current to do work in terms of watts. A kilowatt (k.w.) equals 1,000 watts or 1.34 horse power (h.p.).

In 1819 Professor Oersted, of the University of Copenhagen, proved that an electric current has the power to produce magnetic effects. The possibilities of the discovery so promoted a study of the new science that during the next ten years practically all the principles were discovered that have had important applications in modern electrical development. But it took many years and much patient experiment to make the application of these principles of wide commercial value.

First it was shown that a wire through which an electric current flows is surrounded by a magnetic field. Next, in 1825 Sturgeon showed that if a core of soft iron be introduced into a coil of current-bearing wire, the iron is strongly magnetised and that it loses its magnetism when the circuit is opened. From these researches the electromagnet was devised which is brought into practical use in operating such instruments as the telegraph and the electric bell.

WHAT MICHAEL FARADAY DISCOVERED.

Up to this stage only simple cells, or batteries composed of simple cells in series, were used. While these were valuable for light forms of work such as already mentioned, they were not practicable for a large continuous amount because of the prohibitive cost. Too many cells were required to produce high voltage and the chemicals needed renewing too often. So for a time the investigators of the new power seemed baffled.

But in 1831 Michael Faraday, of London, the greatest of experimental scientists, discovered that a current of electricity could be generated by a magnet. He showed that if a magnet were rotated around a coil, or if the coil were moved up or down, or rotated about a horizontal or a vertical axis between the poles of a magnet, a current was generated. This current, called an induced current, has made possible the wonderful electrical development of the past half-century.

Physicists in all quarters busied themselves at once to make use of this knowledge, and very soon many varieties of small motors were constructed, all after the same general plan.

THE INDUCED CURRENT.

In its simplest form this generator (or dynamo) was a coil of wire rotated about the axis in a magnetic field made by two steel magnets, the coil and its connections being called the armature. When put in operation an astonishing phenomenon presented itself to those early scientists. The induced current in the coil was shown to be alternating. During one half of the revolution a current flowed through the wire in one direction, beginning at zero, rising to maximum, and falling to zero. During the other half revolution it flowed in this manner in the opposite direction.

Steps were taken next to have this alternating current sent always in one direction. This was eventually accomplished by the use of commutators. Soon after it was discovered that the magnetic field could be established by using part of the current to excite the electromagnet, giving a greater potential than with the steel magnets. It only remained then for someone to invent a generator which would give a sufficiently uniform and powerful current to be of commercial value. In 1870 Gramme did this, and about the same time a motor was devised that would transform the energy of the current into mechanical motion. From that year electrical development has gone on apace.

ONTARIO COMES INTO HER OWN.

And now we are nearing the most recent step in scientific achievement—the harnessing of the great water-power of the world. But it required still further inventions to reach this end, which were perfected only a few years ago. It was soon proven that the direct current dynamo was not adapted to long-distance transmission, because it could not be used to generate over 1,500 volts, whereas a potential of 60,000 volts and upward is required. So it was necessary to invent a generator capable of sending out the alternating current originally produced by the armature, at high voltage. This feat was accomplished within the memory of our young men.

When Faraday discovered the induced current, away back in '31, he observed that when two independent coils of wire were wound around an iron core, one current-bearing, the other non-current-bearing, a current was induced momentarily in the latter coil. Upon this foundation was built the modern transformer. It is operated on the principle that an alternating current in one coil will produce an alternating current in the other. It was finally discovered that if a current-bearing coil—or primary—of large wire with few turns was surrounded by a non-current-bearing coil, or secondary coil of fine wire with many turns, the current induced in the secondary had a much higher voltage than the primary current, the amperage, of course, being correspondingly reduced. This discovery showed that an alternating low voltage current could be transformed to a high-voltage current. Similarly it was shown that this transformer could be used to produce the opposite effect, i.e., to change a high voltage to a low voltage by passing the current through the outer coil of wire. A transformer station of the first kind is called a step-up station and the second a step-down station.

Hence it is possible now for an alternating current generated by water power at a convenient voltage to be stepped-up into high voltage for transmission. Then at various points along the high tension line stepping-down stations are built to reduce the voltage sufficiently for local use. This is the general principle upon which the hydro-electric power companies at Niagara and elsewhere operate their plants.

When these inventions were perfected it was seen clearly by electricians that the methods of securing power would be revolutionized. Plans were installed along waterways in many lands, and scientists saw their dream nearing realization of the electric spark flashing in millions of homes and of a million wheels humming in tune to the current.

ONTARIO LACKED COAL.

Now, this development meant more to Ontario than it could to many states. Ontario was born amid doubt and strife at the time of the American Revolution. It was settled and developed by an earnest and steadfast people that have stood always for truth, freedom, just laws and loyalty to the finest constitution on earth. It grew in population and in power steadily until it became, and is yet, the richest and strongest province of the Dominion. But lurking in the shadows there has always been one great weakness. Ontario has no coal. It seemed as though Providence had been forgetful of our province so far as power was concerned.

But Ontario has vast resources of water-power, while at Niagara is one source of energy unequaled upon the continent. Wherefore those forwarding the interests of the province looked eagerly toward the power the new form of energy promised.

The fulfilment of those promises is now evidenced by the great power companies operating at Niagara and by many smaller plants situated along other waterways throughout the province.

And now at last we have reached the hydro-electric era proper.

"These great power energy-producers—the rapids and falls on the rivers of Ontario—are common property," the consumers of Ontario argued. "They are a public heritage and should be utilized by the people, for the people. Why can't a great transmission system be devised to bring electric energy to our doors at cost?"

The demand for such a system became so general and so insistent that many resolutions were sent to the Government requesting an investigation of the matter. The Legislature complied, and in June, 1903, an Act was passed which authorized any two or more municipalities to appoint representatives to inquire more closely into the matter.

FIRST HYDRO REPORT.

In August, 1903, seven municipalities were represented at a conference and a commission was appointed. They prepared and published a report in March, 1906.

Meanwhile the Government had changed and Hon. Adam Beck, a member of the first commission, who had studied the possibilities of the project very closely, took up the matter with the present Government. As a result, a permanent Hydro-Electric Power Commission was incorporated by the Legislature.

A very close investigation followed, extending over many months. Expert engineers were brought upon the ground who made a close study of the situation. The evidence finally adduced was that electric energy could not only be transmitted to the municipalities from Niagara, but that that it could be sold at a considerably lower rate than was then being charged.

After this report the largest deputation that had ever come to Toronto awaited upon the Government asking that the work be undertaken. Consequently a second committee, which still holds office, was appointed in May, 1906, with the Hon. Adam Beck as chairman. It was vested with the power to authorize and to promote the development, generation, and transmission of hydro-electric energy throughout Ontario. After the system is fully completed the Commissioners will then act in the capacity of trustees.

WE CAN TEACH THE GERMANS.

"I don't see why you fellows talk so much about Germany," said one of the staff. "One would think everything good along electrical lines comes from the Germans. Why, we have a system here which is unequaled anywhere in the world. Germany has nothing like it. No other nation has. And they're coming here now from foreign lands to study our methods. New York State is trying to organize such a system as ours right now."

In so short a time has the seed borne fruit. By-laws were submitted to the various municipalities throughout Western Ontario in January, 1907, authorizing the incoming councils to deal with the Hydro-Electric Power Commission. In most cases these were carried unanimously and steps were taken to obtain energy from the Commission. With this support the work went rapidly forward.

The two most noteworthy engineering feats, perhaps, were the construction of 281 miles of steel tower high tension distribution line of 110,000 potential and the construction of insulators which successfully underwent a 220,000-volt strain when wet. Both of these are unparalleled in the history of electrical development.

As the Government did not wish to interfere with vested capital, the several power companies at Niagara were required to make a tender to supply energy. The contract was given to the Ontario Power Company and an agreement was finally made on March 19th, 1908, by which the Commission was to take energy from the generators of the Ontario Power Company at 12,000 volts. From the generators of that company it was to be taken to a transformer to be stepped up by the Commission to the required potential—110,000 volts—for the transmission system. The price agreed upon was $9.40 per h.p. a year up to 25,000 h.p. When the quantity taken or reserved shall exceed this amount the price is to be reduced to $9 a h.p. a year.

When the current leaves the generators of the Ontario Power Company it is led to the transformer and stepped-up to the required potential. It is then carried by 281 miles of high tension line as far west as Windsor, east to Toronto and north through Orangeville. It is stepped-down at the various municipalities and is transmitted by 13,200 and 6,000 volt low tension lines to the doors of the consumers. For traction and heavy motor work a potential of about 2,200 volts is required, while for lighting purposes as low a potential as 110 volts is sufficient. Altogether there are over 300 miles of low tension line, 160 miles of line having been constructed in 1913.

The Niagara distribution lines cover western Ontario very thoroughly. But the plans of the Commission embrace the entire province. They have a contract with the Kaministiquia Power Company for energy which is supplied over a 22,000-volt line to a transformer station in Port Arthur. The Simcoe Power Company is also under contract. Agreements in each case have been drawn up similar to that with the Ontario Power Company. Plans have been made also to cover Trent Valley district, Lake Huron and Georgian Bay district, the Ottawa Valley and St. Lawrence district, and the Algoma, Thunder Bay, and Rainy River districts.

With the abundance of water power that is awaiting development in Ontario it should not be long before a network of power lines cover the entire province.

It is not the policy of the Government to conflict with vested capital, and if reasonable rates can be secured the power will be bought in these new districts from operating plants. But where necessary, generators will be installed. A 1,200-h.p. plant is under course of construction now and will be ready in the spring for operation at Wasdell's Falls.

A GIANT PEOPLE'S COMPANY.

"But the Commission has done more than supply power to the door of the consumers at cost," explained my informant. "It has installed a mighty transmission system which will be owned by the consumers of Ontario. The general outline of the plan is this:—We are organized to sell power at cost. The Government advanced loans which were used to establish the transmission service. These are to be paid back through thirty years by the amortization plan. That is, each year a share of the principal and the interest is paid, so that after thirty annual payments the debt will be cleared. In charging the municipalities, a rate is made high enough to cover the cost of power, the interest and that portion of principal paid annually, depreciation, and sinking fund.

"The cost of the low tension lines and the cost of hitching up consumers is dealt with in another way. One-third is paid by the municipality at once. This portion is then collected from the consumers as a service charge, and it is so calculated that after paying through a number of years the debt is cleared. After this period the consumers are then really the owners of their own installations. So, you see, we are really forming a province-wide company, composed of consumers, to transmit electric power at cost."

In my second article I shall explain the steps that have been taken by the Hydro-Electric Power Commission to serve the needs of the farmers of this province, and something of the influence it may exert in regenerating rural Ontario.

ELECTRICALLY HEATED GLOVES FOR MOTORISTS

IT would appear as if the motorist is to become the most pampered traveler on earth. The latest addition to his luxurious outfit is a pair of electrically heated gloves to keep the blood in circulation through his hands while gripping the steering wheel. The first move in this direction was a wheel having a hollow stem and rim, through which the exhaust gases were circulated; but this was clumsy and somewhat of a makeshift. Then came the electrically heated wheel, which is far neater and more satisfactory. The radiation of warmth is accomplished by two distinct methods. In one the glove itself is heated by means of units coiled around the fingers. On the inside of the index-finger and the thumb there are two contacts. The rim of the wheel at two places is fitted with short segments of metal which are connected to the storage battery lighting system. When these two segments are gripped by the gloves the contacts establish a circuit, the fine coil units around the fingers become heated, and the fingers are kept in a warm glow. When the hand becomes too hot the motorist does not move a switch to cut off the current, but merely moves his hands to grip a non-metallic part of the wheel. The second device is a modification of this, since some motorists prefer to grip the wheel with the bare hand. In this case the segment of the wheel of each side is bound with a small heating coil, which is continuously energized. By gripping these sections the hands are kept warm and active so far as the palms and inner face of the fingers are concerned. Here again, when the hands become uncomfortably warm, one has only to grip the wheel in a different spot where heating coils are not provided. The volume of current consumed is extremely small but highly effective.

$150 Per Acre From Currants

Some Facts About the Raising of Currants and Gooseberries

By E. F. PALMER

The writer has prepared a bulletin for the Ontario Department of Agriculture on this subject He has shown farmers the possibilities in the raising of currants and gooseberries, and gives to them the best information on producing them that is possible These figures show the cost of production, much of which goes into the farmer's own pocket, as the laborer doing the work. A return of several hundred dollars per acre is not uncommon in the Niagara peninsula.

TWELVE years ago the farmer found it more profitable to let the surplus currants and gooseberries wither on the bushes along the garden fence, after his wife had gathered all she wanted for jelly or an occasional tart in the winter, than to bother taking them to market. Then he might get about 65 cents for a twenty-pound basket of black currants. Last year the same fruit would have sold from $1.50 to $2, and there is every indication that the prices will remain good. With the growing popularity of these fruits outside, they will be appreciated more than ever for home use, and a few bushes will be well worth taking care of on every farm, but for the commercial grower they are especially valuable. They do not require as much care as most small fruits and ripen at a slack season or after the berries have been picked.

The Champion black currant.

It is generally better to plant the berries in the fall, late in August or in September rather than in the spring if for no other reason than that the latter is the busier season. If the fall is favorable they are ready to start a good growth the following spring. The farrow should be deep enough to cover all but the top bud or two so that there must be a good strong supply of roots; the location must be well-drained so there is no danger of standing water at any time; and during the winter the cuttings should be well mulched to prevent heaving of the ground through freezing and thawing. For spring planting the cuttings may be taken in the late winter, and stored in the cellar thoroughly covered with moist sawdust to encourage a mass of rootlets to start.

While the method of propagating plants by cutting is used successfully with both currants and gooseberries, the latter are sometimes hard to start in growth and more satisfactory results are insured by layering. The bushes are pruned well in the autumn to get a strong growth of wood the next season. Then in July when the shoots have nearly completed their growth, the earth is heaped up well around and through the bushes. This can be done most conveniently with a plow, packing the earth well afterwards until only the tips of the shoots are seen, and leaving a mulch of loose soil on top to conserve moisture. American varieties will be able to plant in the fall or the next spring, but English varieties take a year longer to root well.

Both currants and gooseberries being surface-feeding plants, thrive on cool, moist, fairly heavy soil. A rich well-drained clay loam is best if you can get it. A northern exposure or some protection from the sun is also desirable, some growers find it a good arrangement to have the bushes interplanted with the peach trees. To conserve the moisture and coolness of the soil thorough cultivation is necessary especially for gooseberries. Fall-plowing or disking, leaving a drain furrow down the centre of the throw, with cultivating or harrowing in the spring and after a heavy rain will keep the ground in good condition, but all this cultivation must be shallow as the roots are close to the surface. For the same reason the ground should be heavily manured. A liberal application of well-rotted manure in the fall with a dressing of potash and super phosphate in the spring is almost a necessity. After the crop has been harvested cultivation should

cease in order to allow the young wood to ripen before winter sets in.

Much of the success of the crop depends upon the pruning. Since red currants bear their fruit on spurs of two or more years' growth, and the black currant bears its best fruit on wood of the previous season's growth, the method of pruning differs slightly. In pruning red currants the object is to have a vigorous young growth always coming on to take the place of the older branches as they become unproductive. Branches four or five years of age should be removed. With black currants practically a complete renewal of wood has to be obtained each year. The gooseberry makes much more wood than it is desirable to have, so severe pruning is necessary. The bush should first be brought into good shape by leaving five or six of the strongest shoots regularly distributed to make an open head. Fruit is borne only on year-old wood and spurs from older wood but it is better not to have any wood over three years old. The side shoots from the older branches should be headed back or cut out altogether so as to make it easy to pick the fruit and yet leave sufficient wood to produce a good crop and to shade the fruit from the sun. In a hot dry time gooseberries are likely to be injured by scalding. If well-manured, cultivated, sprayed and pruned the plantation will not have to be renewed for many years.

A great deal of the selling quality of the fruit depends upon the way it is picked and packed. Red currants should never be stripped off the stem. The skin is likely to be broken in this way and the fruit spoils quickly. Of course this does not apply to black currants; with these the cluster stems may be left on the bush. No fruit should be picked while wet. If packed up and shipped in this condition it will soon spoil. For distant markets it is also necessary to pick the fruit while it is still rather hard, and to pack it in the twenty-four-box crates rather than in the eleven-quart baskets so that there will not be so much fruit together. The appearance of the package counts a great deal with the ultimate consumer, and it is really the consumer that we have to cater to.

COSTS AND RETURNS.

The following are the figures of two leading fruit-growers, and although any such figures can be merely approximate and not actual results, yet they are valuable as showing reasonably accurately the cost of the various cultural operations, and the probable returns under proper management. Red currants are grown in the first case, and black currants in the second, hence the difference in yields and returns.

	One acre. Red Currants.	One acre Gooseberries.
(1) Rent of land per year (one acre)	$10.00	$10.00
Taxes	2.50	2.50
Preparation of land	4.00	5.00
Cultivating during season	3.40	3.40
Spraying materials	14.00	14.00
Pruning	4.00	8.00
Fertilizers	18.00	18.00
Picking and packing	70.00	60.00
Crates and marketing	15.00	15.00
Cost of management	15.00	15.00
Depreciation and annual share of cost of plants and planting	22.00	30.00
	$212.90	$190.90
Selling 200 24-box crates red currants at $1.60	$320.00	
Selling 300 11-qt. baskets gooseberries at $1.00		$300.00
Net profit	$107.10	$109.10

It is estimated that the cost of plants and planting for one acre of currants (1,400 plants to the acre) is $76, and gooseberries (1,320 plants to the acre) $208. The last item of expenditure given, $22 and $30, in the tabulated estimates are reckoned as a fair proportion for each year to bear of depreciation and the initial cost of plants and planting as given above. The yields given are those to be expected from patches four to eight years planted in the case of currants and five to ten years with gooseberries.

	One acre Black Currants.	One acre Gooseberries.
(2) Rent off land per year (one acre)	$15.00	$15.00
Taxes	2.00	2.00
Preparation of land	5.00	5.00
Cultivating during season	5.00	5.00
Spraying and materials	5.00	10.00
Pruning	10.00	10.00
Fertilizers	15.00	15.00
Picking and Packing	70.00	60.00
Baskets and marketing	19.00	28.00
Cost of management	25.00	25.00
Depreciation and annual share of cost of plants and planting	20.00	20.00
	$191.00	$205.00
Selling 200 baskets black currants at $1.75	$350.00	
Selling 350 baskets of gooseberries at 90c.		315.00
Net profit	$159.00	$110.00

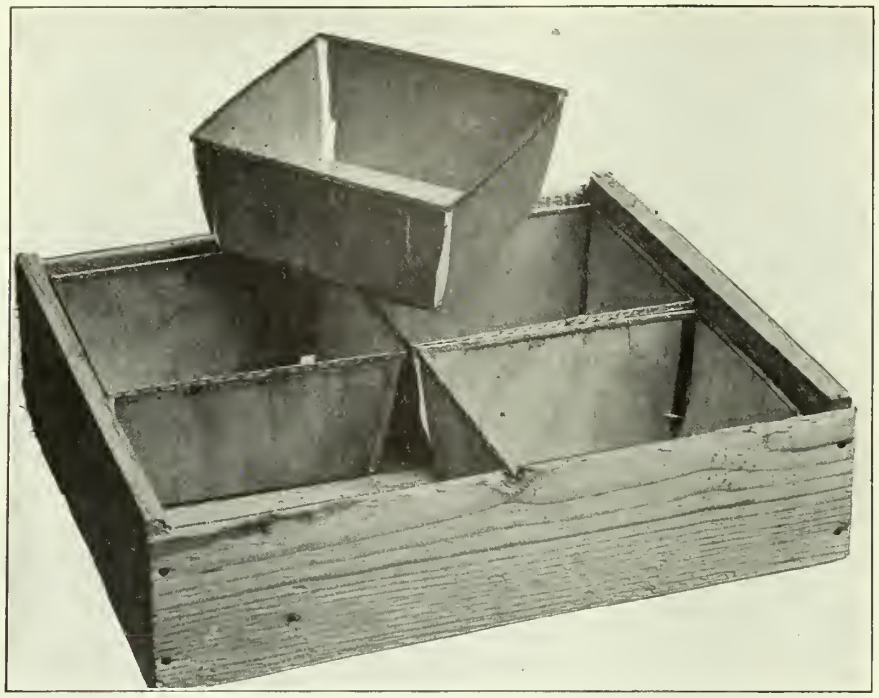
It is estimated here that the initial cost of plants and planting would be $72.50 for black currants (1,245 plants to the acre) and $190.25 for gooseberries (1,200 plants to the acre). The last item of expenditure is intended for depreciation and a fair annual share of the above initial expenditure.

CURRANT WORM.

This is the most common and destructive insect attacking both currants and

The Downing gooseberry.

gooseberries. In the spring the small, green, black-spotted larvæ feed on the foliage, beginning their work on the lower leaves. A second brood occurs in the summer. When worms first appear spray with 2 lbs. arsenate of lead to 40 gallons of diluted lime-sulphur, or of Bordeaux mixture applied just before the blossoms appear and repeat soon after the fruit is set. See that all the inner and lower leaves are covered. The lime sulphur is added to control diseases. If the second brood is seen to be present, hellebore, 1 oz. to one gallon of water, should at once be used. The hellebore should be fresh as it loses strength if exposed to the air.



A crate commonly used in British Columbia for shipping plums, currants and gooseberries. The dimensions are 15¾x15¾x4¼, to hold 4 veneer tin top baskets.

THE CURRANT BORER.

The borer is the white larva of a clear-winged moth, blackish in color with yellow bands around the body, resembling a wasp. They lay eggs in the axils of the leaves or on any little opening in the canes and the young larvæ on hatching bore into the pith where they feed till full-grown. They winter here. If the infested cane is cut through the darkened pith shows clearly the work of the borers. There is only one brood each year. No definite line of treatment has been established, but the following is suggested; begin when the plants are small, go over the plantation three or four times every summer and cut out and burn all canes showing sign of disease. All prunings should be burned before the end of May, or the moths will emerge from them.

RED SPIDERS.

These are mites feeding on the under surface of the leaves. They are not always red some being pale green and others whitish in color. The mites have the habit of spinning a very fine web on the under surface of the leaves, beneath the protection of which they feed and lay the eggs. Currant leaves affected by these spiders are brownish or reddish yellow in color. These mites thrive best in wet weather and if lime sulphur is used in the spray mixture and the under surface of the leaves is well covered there will be little trouble from these pests.

CURRANT APHIDS.

These are green plant lice which feed on the under surface of the leaves of both currants and gooseberries causing the leaves to curl downward. The parts of the upper surface between the veins are usually elevated in large irregular blisters that are often reddish in color. Arsenical mixtures are used as aphids are sucking insects; hence contact poison must be applied. Black Leaf 40, a tobacco extract, is probably the best. The only objection to this being that it is rather expensive. It should be used with lime sulphur as soon as the eggs have hatched, that is a day or two before the buds burst. This will destroy most of the insects and if another application combined with the lime-sulphur or Bordeaux mixture is given just before the blossoms come out, almost every aphid can be destroyed. Of course in the latter case the spray must be shot up from beneath so that the under surface may be covered. Kerosene Emulsion or Whaleoil Soap (1 lb. to 6 gallons of water) may be used instead of Black Leaf 40, but should not be combined with lime sulphur. It is almost useless to spray after the leaves have become curled, as it is then impossible to hit all the aphids.

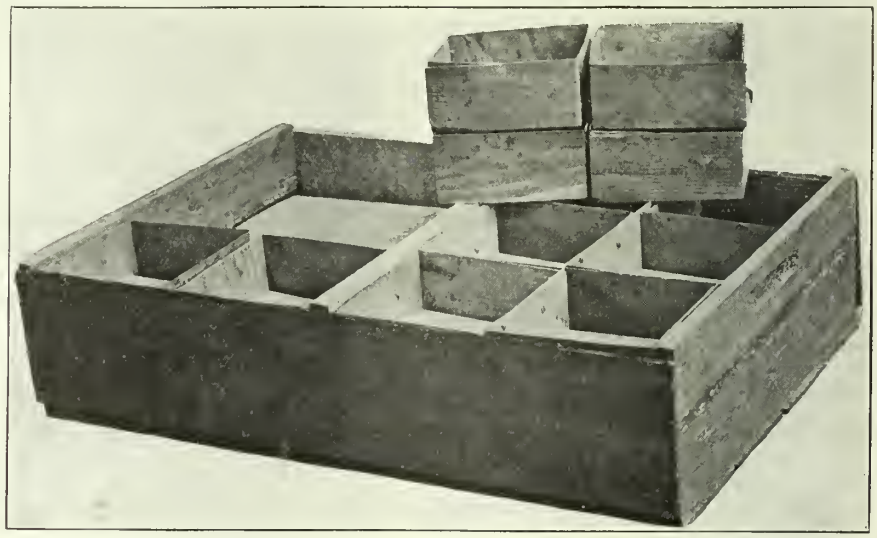
SAN JOSE AND OYSTER SHELL SCALE.

San Jose and oyster shell scale will soon kill affected plants. Prune the bushes out so that every part can be thoroughly sprayed and use lime-sulphur, specific gravity strength 1.032 to 1.035 (commercial lime-sulphur 1 gallon to about 8) a little while before the buds burst. Badly infested bushes should receive two applications.

LEAF SPOT AND ANTHRACNOSE.

Leaf spot and anthracnose are caused by two or three different fungi. The leaves become spotted, turn yellow, and fall prematurely. It may be controlled by three to five sprayings with Bordeaux 5-5-50, but it is doubtful whether the disease is sufficiently destructive on the average to warrant so much expense. On the first appearance of currant worms spray with the mixture as given for this pest and repeat if a second brood appears.

The selection of varieties is an important part and should be given careful consideration. Some varieties succeed well in some localities and are highly recommended by the growers of that district, while they are more or less a failure in others. It is well therefore, in deciding upon varieties to make careful inquiries as to what varieties are best for that particular district.



This crate is used in British Columbia for shipping currents. It is 23 inches long, 16¼ inches wide, and 5⅞ inches deep. It holds 24 4-5 quart baskets, each 5¼ x 5¼ x 2 inches.

Land O'Gold:

By JUSTUS MILLER
Illustrated by MISS MARY V. HUNTER

A Canadian Farm Romance that Thrills with Human Interest and with the Joy of Making Things Go

SUMMARY OF PREVIOUS CHAPTERS

Land O' Gold is the name of an Ontario farm in a well-settled district. An only son who is brought up there finds the mortgage and the uninteresting succession of chores and resultless toil, to be a hindrance to his future, and so cuts loose from the farm. He sees it is an education he wants and so decides to attend the agricultural college, but lack of funds drives him into newspaper work at Ottawa. His visions of usefulness are soon destroyed by the sordid grind of the editorial room and he drifts to departmental work only to detest its blank future. At a Sunday School picnic he meets Grace, the daughter of a lumber king, who sets his imagination on fire. Just as he so plans, a telegram from his father at Land O' Gold contains fateful news.

The story is one of intense interest to every farmer, young and old, and will be followed through every issue with the keenest interest. It is a real modern story of endeavor and struggle with modern hopes and fears. The illustrator, Miss Hunter, is a talented girl, who also found her early inspiration on the farm. The truth that is woven into the romance aids powerfully in the appreciation of the story. —*Editor*

"HE was injured at a barn-raising," said Molly, as we drove from the depot. "He spoke your name very faintly last evening. He has not been conscious since."

I shall hasten over the next few days. They were sad enough, and the lonely days that followed were dreary enough, God knows, without recalling them now.

Dear old Daddy! At midnight he rallied a little and his lips moved. Faintly, as it were an echo from a drifting soul, we caught the murmur, "Land o' Gold." With a faint sigh his head sank wearily back. And Daddy slept with our fathers.

I sat by the still form after the others had crept away. My mother's cheek had been pressed to mine, but I had hardly known it. I was thinking of the dead man and of the dead days. In his waning years I had left him to fight a losing battle all alone. We had been comrades together and I had forsaken him. I had been false to my colors. I caressed the furrowed cheek reverently as a holy thing. He had lived and fought and died. Ah! he was resting now. His thin gray hair fell pitiably over his temples and his hands rested weakly upon his bosom. He had lived for others and had crossed the flood bravely. Poor, dear old Daddy! And I found myself crying silently and freely as I used to in my first days upon Land o' Gold when I was a little boy. Sitting all alone with my dead in the quiet night. I grew suddenly into a man.

HURRYING AFTER A BUBBLE.

Then I knew what I had been following. I had trailed a shadow and verily the shadow I had captured. I looked as through a powerful glass at the multitude of men hurrying through life toward a bubble which bursts before they can touch it.

Success! Why, it is only relative. How many broken hearts have cursed that myth. To succeed is to live. To live is to serve. Had I secured my millions, could they have eased the agony of my soul that night one tittle? Could they have opened those faithful, kind eyes again? No! I had failed where I might have succeeded. I could not retrace the past; but, please God, I would shape the future as the soul that had gone would have wished.

After the shock had passed somewhat I took stock of the situation. I found there was a hundred-acre farm well stocked, but with a three-thousand-dollar mortgage upon it. Three thousand was due in life insurance.

The situation was not so cheerless, after all. In that awful night I had sworn to myself that I would not leave the old place again. I had determined to carry out Dad's desire to make old Land o' Gold pan out.

"Well, Molly, we're not in the hole so badly but we'll pull out all right," I said, after things were straightened up. "There's corn in Egypt yet."

"Well, I hope so," said Molly, doubtfully.

She had seen other things turn ashes in my hands.

Like the neighbors, Dad had carried along a mixed farm. That is, he had a few cows, a number of pigs, grew some grain and hay for sale, and raised a colt or two each year. During the winter months he usually teamed for lumbering companies.

"What is it Jimmy?" asked the mater, one day as I sat gazing moodily into the fire

But I had no intention of following the old programme. I knew of one feature, at least, that had never been developed: I had my eyes upon an old orchard back of the barn that had been neglected ever since we had bought the farm. In our county there were many such orchards. At one time apple growing must have been boomed, judging by the acreage set out.

MY EYE ON AN ORCHARD.

In my time, however, it had fallen into disfavor. This was the more surprising as the county was situated in the southern section of the province, bordering Lake Erie. But orchard pests, and particularly bark lice, had done much damage, and crooked buyers had given the trade a black eye.

"You've got a tough pull with that sand o' yourn," said Bill Mason that Fall. "What you goin' to grow on it? Thinkin' o' rye?"

But I had not the local contempt for sand. I had seen its possibilities developed at Oakville; and when surveying after my sophomore year in Niagara I had known sand to sell at three hundred dollars an acre. Besides, mine was of a loamy nature.

That Fall I conducted operations as usual, but at every opportunity I studied apples. I made a specialty of using the Provincial and Dominion Departments of Agriculture, and by spring I had my course outlined.

I wished to spend most of my time with the orchard that year; so I looked around for a hired man. I knew it would be difficult to find the one I was after. I wanted a young fellow who could think and who was capable of development. Eventually I found him in the person of Jake Smith, an old chum, the last branch of a withered family.

Jake had had a history something similar to mine. We had made a target of the grocery window together and had climbed the same trees and gone to the same parties when we were little

chaps. His father was a country doctor and had been a chum of Dad's. About the time I started to college old Dr. Smith died, and Jake had been left to shift for himself. After numerous positions, which he didn't like, he drifted back to our little village.

Jake was destined to have a mighty influence in my history, so I introduce him here.

THE VISION OF GRACE.

Meanwhile I tried to fight down the vision of Grace. It was not to be so. I had only to close my eyes to bring her before me as I saw her the last evening by the canal, her face all aglow with enthusiasm.

There were many middle-aged and old men and ladies in abundance. There were also several young men, but they were mostly English lads working for farmers.

"What is it, Jimmie?" asked the mater one day as I sat gazing moodily into the fire.

"Well, son, just be a man," she cheered me when I had told her. "I will tell you one little secret now. To a real woman wealth does not mean very much. You will be judged by your manliness, wherever you go, but most of all in a girl's eyes. If she is worth having and if you are worthy of her, don't be afraid to face the future bravely."

Oh, these infernal "ifs"! I was always impatient. But I had put my hand to the plow. There could be no looking back.

Grace sent a letter of condolence to me and one to Molly. I blush now to think how many times I read it. I wrote her a letter from a sorrowful heart. Her ready sympathy and noble spirit touched the well-springs of my being. From that time a steady correspondence was established both with myself and with Molly.

Looking backward, I date all my success from that time. I just couldn't fail. Every time I was discouraged those kind brown eyes held me up and turned me back. We hear very much of self-made men upon this continent, but I wonder how many have found the motive power in a woman's clear eye and have been fortified and sent onward by her brave heart.

I made a study of farm conditions. Why did young fellows such as Jake and myself leave the farm? Why were they leaving in hundreds every year? Why hadn't Dad prospered? What was wrong with rural Ontario anyway?

Now, I've heard a hundred answers to this riddle. But I believe a combination of many conditions causes it. The answer, I think, is just one of management.

The men work hard enough, but they don't work intelligently enough. Consider Bill Mason, for instance. He had a fifteen-foot well that went dry half the year. That meant he had to draw water two miles from the lake. He worked to get the water, I know; but it cost him in time every year half what a drilled well would have cost, and he could have got a flow one hundred feet down.

Then there was Seth Brown. I have seen him go by here on his way to Albert, day after day, with corn on the ear to the distillery. His rack held seventy-five bushels and on our roads he could have drawn twice that much. That simply showed a waste of as much time as he spent. He never figured out economy of labor.

Even the nature of the soil wasn't understood. Soil was just soil. Why, I didn't know of a single man who'd ever tried to have it analyzed, or who had ever studied what kind of crop was best adapted to it. They all grew pretty much the same thing in just about the same way.

Very few even selected the seed they planted. They all know that the best and plumpest seeds would give larger yields, but they just didn't take the trouble to select them. They didn't even test them before planting to see if they were fertile or not. They simply covered them with earth and trusted God Almighty to send a crop. Of all His children, I think the farmers are the most trustful—and the most presumptuous upon His kindness.

One might have thought that every one would at least have practised a rotation of crops. It is pretty well known even to city workers that plants can't continue to flourish year after year in the same field without something being returned to the soil. Some roots are longer than others, and different plants require different proportions of elements; while the legumes actually gather nitrogen from the air and store it in the soil for future use. It doesn't require much knowledge to prove to a person that a rotation should be evolved so that the roots might work at different depths, and so certain plants might prepare the soil for others to follow.

This fact seemed to be pretty generally understood, too. I have heard a great deal of argument about crops and soils and rotations by Bill Mason and his type. But what did it lead to? I found in almost every case that nothing approaching a skilful rotation was practised by a single one, while some allowed even the stable manure to lie in their barnyards for years. I have never ceased to marvel at the wisdom of the Corner Store Philosophy and the little practical use the philosophers ever make of it. They *know* a great deal in the abstract often, but dynamite could hardly move them to apply it.

And so it was in every department. A great many kept cows, but they never tested them. Of course, quite often a cow's milk would be weighed, but nothing systematic was undertaken. No man could tell just how much any animal paid him. Perhaps it didn't pay at all. But you would have had difficulty in making him believe that.

In all our district I didn't know of one single man who kept an accurate account of his operations. Indeed, I didn't know of a single one who kept anything at all that even by a vivid imagination could be called a system of accounts.

NOT SURPRISED AT A MORTGAGE.

"What's the use of accounts anyway?" argued Bill. "When I finish the year I don't need no bookkeeper to tell me what I made. If my bank account is two hundred dollars ahead I know I made that much clear."

I was not surprised that Bill had a mortgage upon his place. If any other business in the world had been managed like Bill's farm, it wouldn't have had a leg to stand on in one year.

Bill's farm wouldn't have had either for that matter, only Bill and his wife and his two little girls and his half-grown boy worked like galley slaves. The very youngest milked cows and did chores. I've seen little Bessie, eleven years old, milk four cows; and Mrs. Mason used to drive horses like a man That was why Bill's farm hadn't gone long before.

And that was why I left home, and why a great many others have. It is the hardest work with the poorest pay on earth all right if it isn't managed skilfully. The fellow who thinks he's going out to show the natives how to farm without a knowledge of the business should stay right where he is. And

Continued on Page 70.

A Dane's Success in Canada

Mixed Farming in Alberta is Making Money for a Man who Spent 25 Years in Town

By JOHN GLAMBECK

Our newcomers to the farms of Canada, especially from the Northern countries of Europe are making good, both as agriculturists and as citizens in Western Canada. Especially good are the Danish immigrants because they have learned the principles of thrifty farming in their good old motherland, and they carry with them to the fertile acres of Canada the qualities necessary to reap rich rewards for their labor. They are also model citizens because they have fully grasped the significance of intelligent co-operation, and the words of Mr. Glambeck, who is a resident near Milo, Alberta, will come as a pleasant surprise to those who think a townsman cannot go on to the land and make a success of it. As Farmer's Magazine has often remarked, there is no place quite as good as a good rural home.

DURING the last two years, so much about farming in Denmark has appeared in Canadian farm papers that Canadians have, no doubt, formed a good opinion of the Danish farmer. Although I left Denmark several years ago I have followed very closely the great development which has taken place in that country and am prepared to claim that Danish farmers as a class are second to none, either in Europe or America. It is not that a few individuals have made great fortunes (as is the case in some parts of Canada), but the whole Danish farming class, big and small farmers, have made good. The reason for this is that intensive farming is carried on, making the smallest patch yield enormous crops, close attention is paid to detail, only pure-bred stock is kept, and last but not least, co-operation. Everything the farmer raises is sold through co-operative societies and must be up to the set standard, hence it commands a high price. Everything he buys is bought from the co-operative store. The middleman has practically been eliminated, and the profits he used to take, now go to the farmers.

But when the Danish farmer lands in Canada he is at once cut off from the conditions which made farming a success at home. He takes his individual position among other settlers, and takes up the battle against all the drawbacks found in a new country such as a long way from town, poor markets, high price of machinery, etc. Yet in spite of these conditions as a rule he makes good.

KEPT AWAY FROM FARM WORK.

To give my own story, I was born and raised on a small Danish farm, but left the country at the age of eighteen, just about the time Denmark began to develop along the line which has since made her world-famous. I was so disgusted with life on the farm that when I reached the United States I kept at a safe distance from all farm work. I was one of the boys who left the farm for the city to make my fortune, and while I became neither bank president, lawyer nor a great business man as is the fate of the traditional farm boy going to town, I got along fairly well. I worked up to a fairly good paying position in the postal service in Chicago, and as it was a civil service job I might have held it the balance of my life. But about eight years ago I caught the "back to the land" fever. After twenty-five years of city life I became tired of looking at sky-scrapers, dusty streets and smoke. My work seemed monotonous and uninteresting. I longed for green fields and sunshine, to plant and watch things grow. After reading stacks of literature on the subject I finally decided to go to the Canadian North-West, and I have never regretted my choice.

25 YEARS IN A CITY.

In the beginning I was lucky to get a fine half-section in one of Southern Alberta's best districts, but apart from that I was rather handicapped. Anyone can understand that a man with no other capital than a large family, who has spent twenty-five years in a city, and has not been used to real hard work is properly up against it. What I did not know about farming would fill a large book and I often paid dearly for my inexperience, but from the first I resolved to stay with it. I had no thought of selling out as soon as my homestead patent was obtained and mine is about the only place in the neighborhood that has never been offered for sale. I had, and still have perfect faith in the Alberta soil, the long days and glorious sunshine.

A tidy, prosperous-looking home of one of our newer Canadians now resident North of Edmonton. Note the little school house in the distance. Our foreign-born farmers are making good.

I watched the way my neighbors did things and followed the best I could, and it is comparatively easy to get the first crop or two on the Southern Alberta prairie. What troubled me most was how to farm this land after it got older and there was no more sod to break. Just about that time I was fortunate enough to see an article in some farm paper on the "Campbell or Dry Farming System." I became interested in this at once and read all the material I could find on the subject. From my own experience I am now prepared to say that the treatment of the soil with its corner-stone summer-tilling, is the only sure method of farming in Southern Alberta or any other place where the rainfall is scanty.

40 BUSHELS TO THE ACRE.

Last year I raised forty bushels of wheat to the acre, grading No. 1, while land prepared on the old hit or miss plan yielded only fifteen bushels to the acre. A few years ago I became convinced that wheat-raising alone is too risky and if the farmer is to be placed on a sound financial footing mixed farming must be carried on. With this object in view I began to grow alfalfa three years ago—the first in the district. I started with three acres which proved a success and I am adding a new plot every year. In the matter of a garden I have been very successful, having great encouragement and help from my wife, who is also Danish.

Although my wife has spent most of her life in the city she took to the country as a duck takes to water, and is just as enthusiastic on all farm topics as I am. As a butter-maker and poultry-raiser she is second to none in the district. Besides the general run of garden truck we have raised tomatoes, cucumbers, green corn, squash, pumpkins, citrons, beans and cauliflowers.

A LOVER OF TREES.

Trees have been my special hobby and I could spend much of my time among them. Being born in a part of Denmark where every man owns an orchard, where fields are separated by trees and shrubs, I naturally missed this very much on the prairie; but after seeing how trees grew in the Calgary gardens I felt sure they would grow where I lived too. Three years ago I obtained 1,000 young poplars, willows, ash, maples, and carragonos from the Government. These have made a splendid growth. Last year I planted 1,300 more deciduous trees and 200 evergreens and shall plant more this spring.

I have also a number of small fruit bushes doing well, and I live in hope that I may live long enough to pick apples and plums from my own trees.

KEEPS TWELVE OF THEM.

In the live stock line I have still a lot to learn, but I have made a start. I have six horses, six brood mares, and six milch cows, but shall have twelve cows before the year is out. I also have twelve brood sows and a number of young pigs, but am in need of more buildings, fences and pastures in order to make the hog business pay.

We have a glorious country here with a wonderful future and great opportunities, but there are forces at work to divorce the farmer from the greatest part of his profit. The farmers in the Canadian West are up against problems that must be solved, and no one but ourselves is going to do it. Every farmer should join a farmers' organization and put his shoulder to the wheel. We can well afford to take lessons from the Danish farmers in buying our necessities on the co-operative plan in car-lots, in starting co-operative stores and markets. We can produce the best of everything that will grow in this climate and when we are in a position to obtain a just price for our products we need have no worry about the future.

B.C. Produce Prices

Some Good Returns from the Okanagan Co-operative Growers

By JOHN T. BARTLETT

Co-operation among farmers is everywhere in the air. They are getting together in order to conserve greater efficiency in producing and in marketing. The story of the work of the Okanagan Fruit Growers is here briefly told. It must not be supposed that the co-operative farmer is opposed to the local storekeeper; on the contrary he is anxious to work in harmony and seize the benefits that can accrue to his neighborhood in building up the villages and towns.

SEVERAL new departures will be made by the Okanagan United Growers, Ltd., in handling the agricultural output of the Okanagan Valley, British Columbia, this year. The association, which includes nine local unions, was more or less of an experiment last year, the fruit-ranchers having organized in the spring with the assistance of the provincial Government, but it finished the season with a minimum of dissatisfaction among its members. Produce worth $448,391, including 34 per cent. of the total apple crop of the province, was handled. This year the allegiance of members will be made more binding, loans for the growers will be negotiated on contracts, and a much lower scale of handling charges will be in force.

Publicity is very important in the operation of such an association as the United Growers, Ltd. The past winter Mr. R. Robertson, the manager, has been devoting a good deal of his time to lecturing before the unions. Little grievances have been set right. Turbulent factions have been appeased. Just as fully as possible the actual workings of the Central Selling Agency, which markets the fruit collected by the unions, have been explained. The speaker has gone into the transportation and marketing conditions contended with last year, and the difficulties which had to be overcome. On the many columns reporting Mr. Robertson and his assistants which appeared in the Okanagan papers a penny-a-liner would have grown rich.

The Central Selling Agency this year will insist on all members signing contracts with the locals.

"We must have contracts and approximate estimates in order to judge of our trade prospects," said Mr. Robertson, speaking before the Oyama growers. "Suppose for instance that from a certain district we expect only ten tons of apples and get instead fifty tons; or suppose we expect fifty tons from a man who has promised to ship through our organization, but who finally, not being bound by contracts, sells only ten tons through us. In the one case we would have an oversupply, and in the other might have a shortage—might have sold beyond our power of delivery. If we can know approximately what we shall have to sell, we can then prepare intelligently to market it."

Commencing June 1, no produce will be handled for persons who have not signed contracts. The contract men will be protected in every way. Should there be over-production, every grower will share equally in the returns. Should a hay-grower desire to be released in order to feed his crop at home, he will be released gladly. The contracts, in other words, will be enforced to the spirit and not to the letter.

On the strength of the contracts, the Central Selling Agency intends to borrow money to assist the growers in picking and harvesting the crops. Funds so secured will be used for no other purpose.

Substantial reductions in handling charges will be made. The 1914 schedule, which follows, should be of interest to shippers of fruit and garden produce in other parts of Canada.

Apples, 10c a box; crab apples, 10c box; prunes, 2½c box; plums, 3½c box; cherries, 5c crate; peaches, 2½c box; nectarines, 2½c crate; apricots, 3½c crate; strawberries, 5c crate; loganberries, 5c crate; black currants, 5c crate; red currants, 5c crate; white currants, 5c crate; quinces, 2½c crate; grapes, 5c crate; blackberries, 5c crate; tomatoes, 5c crate; wax beans, 5c box; string beans, 5c box; beets, 75c ton; cabbages, 75c ton; carrots, 75c ton; celery, ⅛c lb.; cauliflower, 5c crate; citron, 75c ton; corn, 5c box; cucumber, 5c box; egg plant, 5c crate; canteloupe, 5c crate; musk melons, 5c crate; water melons, 75c ton; onions, 75c ton; parsnips, 75c ton; green peas, 5c box; potatoes, 75c ton; peppers, 5c box; pumpkins, 75c ton; rhubarb, 5c crate; squash, 75c ton; turnips, 75c ton; vegetable marrow, 75c ton; marrow, 5c crate; hay, 75c ton.

An official table issued recently by the United Growers gives the average prices received for the 1913 crops. No. 1 apples netted $1.28½ per box; No. 2, $1.07¾; and No. 3, 69c. No. 1 pears brought $1.80¾; No. 2, $1.62¼; and No. 3, $1.37. No. 1 crabs netted $1.21; No. 2, 95½c; and No. 3, 52½c. The two grades of peaches returned, respectively, 47¾c and 42¾c.

The association shipped 21,142 crates of tomatoes. The first grade brought 78¾c a crate and the second 48¼c.

SILAGE CHEAPER THAN SOILING CROPS

A liberal, careful, and uniform system of feeding the dairy cow is of prime importance in maintaining a large and profitable production of milk. This system of feeding is often neglected in summer. Unless an abundance of pasture is a certainty, the dairy farmer should provide silage or soiling feed for summer and feed it in such quantities as cows will eat without waste.

If grass pasture is very limited it appears necessary to follow practically the same system of feeding with reference to supplying hay and grain in addition to silage or soiling feed as would be followed in winter. Good pasture in addition to either silage or soiling feed will save hay and grain and encourage a large production of milk. Soiling crops of good quality yield approximately a similar production of milk as does corn silage. The relative expense, however, of producing and feeding soiling feeds is considerably greater than that of producing and feeding silage. This is due to the greater amount of labor expended upon the soiling crops, and to the unpalatability and the waste of such crops caused by storms or drought and conditions which are difficult to control.

Years in which the rainfall is below normal, and the pastures therefore poor, are also the years when soiling crops are likely to be scant or fail. The carrying over of the corn crop from one year to the next by means of the silo tends to equalize the quantity of feed available from year to year.

Distinctive Farm Homes

The Simple Homes that Men and Women Have Planned and Made with Modern Conveniences

By ETHEL M. CHAPMAN

THERE are still a few things in the world that money cannot buy; they have to be created by the individuals who want them. You cannot get a home that will be in harmony with the way you feel about living by simply paying the architect and builder. The simple homes that men and women have planned out of their own minds and hearts, built with their own earnings, planted around with gardens, and made comfortable and lovely through the work of their hands, are worth whole citiesful of ready-to-wear mansions planned and built and cared for by hired specialists.

An up-to-date farm house built last year in Eastern Canada. Note the pleasing effect of the cobblestone in the first storey. Were brick to be used in the second it would make equally as pleasing a combination.

Especially important is the personal responsibility of the home-builder when it comes to planning a farm house, the place where we seem most willing to let the matter take care of itself. We buy a place "with a house on it" and let it go at that, or when the time comes to build ourselves we tell the architect where we want the pantry and stair-door, with instructions to follow the general style of So-and-so's, if we can afford it. The result is that we not infrequently find a neighborhood with not more than three styles of home architecture from beginning to end—an unfortunate condition, not because of its monotony; we are not catering to the eyes of the traveler—but because, if we are to be rightly proud of our homes, they must be distinctive, not like every other place in the district. One means of getting this individuality is illustrated here. For a striking air of rugged and dignified simplicity, nothing is more effective than a foundation, chimney, and possibly porch columns of field stone. If the stonework is continued for several feet above the foundation, so much the better. The rest of the building may be frame, brick, cement blocks or stucco, but the old-fashioned home-like atmosphere comes from the substantial, sheltering appearance of the stone wall.

In planning the interior we can afford to forget all about individuality. An arrangement of rooms, stairs, windows, doors and chimneys that will give convenience and comfort to a family whose tastes and customs of living we well understand is the only motive necessary. With that satisfied, we will have a building that is all our own. The plan given here is not drawn to fit the house shown in the illustration—that is used merely as one attractive type of exterior—the plan is intended to meet the requirements of an average farm house.

In this article on farm homes, there will be found very many things that will be just what the home-builder is looking for. Especial care is being taken to give the farmer a type of house that combines all the conveniences of the city home, and at the same time makes a distinctively pleasing appearance from the outside. In this regard the accompanying photo will strike a bright response in this series of articles by the author, whose work in these lines is now well-known. Her former articles on house building have appeared in the December, February, March, April and May issue of "Farmer's Magazine."

This house is thirty-two by forty feet. The dimensions might be made larger, but could not be reduced without crowding the rooms upstairs. The front entrance, near one end of an eight-foot porch running the entire width of the house, opens into a "square" hall. A winding stair goes from here to a long hall on the second floor, and under the stair is a coat closet. On the right of the hall we have the office, an eight by twelve room, with filing cabinets along one end and a window looking out into the front grounds. The office is separated from the living-room by sliding doors, directly opposite which is a fireplace, so that while the farmer may have privacy in his office when he likes, he can at other times sit at his desk with an open fire and his family very close.

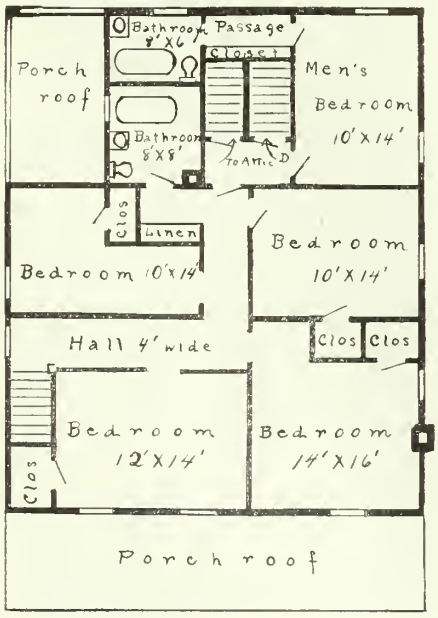
The objection might be made here that it should be possible to get from the hall to the living-room or the office; but since we are not running a long hall through this flat, the room lying between the kitchen and stairway and office will be the ground for considerable traveling, and we feel that the dining-room can stand it better than the living-room. The latter will be likely to have a handsome rug, but since the dining-room is used three times a day by the working men as well as the family, the wise housekeeper will not have the floor covered with anything less durable than a heavy linoleum. Besides, it does not seem to unnerve the country hostess very much to have her visitors go through the dining-room while she is preparing a meal, especially if the room is large enough that they do not get in the way. The position of the kitchen chimney makes it a simple matter to have a grate in the dining-room, and the back porch cutting out the corner of the house gives an opening for an extra window. When the doors into the living-room are pushed back we get light from the windows opposite, making this a very bright, cheerful room. The back porch has its greatest value, however, as an adjunct to the kitchen. A great deal of the kitchen work can be taken out here on hot days; it shelters the kitchen from sun and wind alike, and is an excellent filter for mud tracks. But the arrangement that gives most convenience to both the woman of the house and the hired men is having a men's washroom with a separate outside door and stairway. Another door opens from

The interior of a central Alberta farm house. This house has cold storage, electric light, running water and a sewage plant.

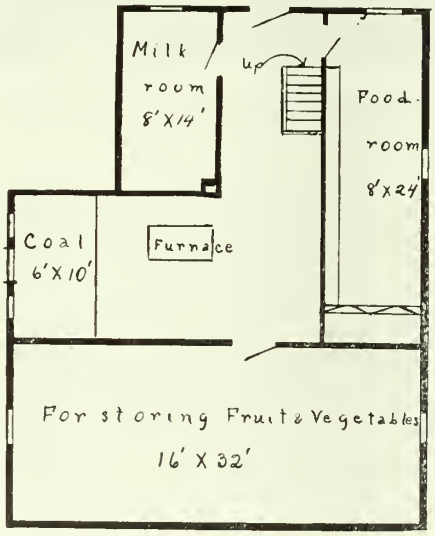
the room to a little recess between it and the kitchen, and here we have the cellar door.

Some housekeepers may think that the space given to the washroom might have been better used as a pantry. We feel that this lack is overcome by having a deep built-in cupboard and a refrigerator. Where a good supply of ice is put in for the dairy, the quantity used in the house would scarcely be missed, although it is considered an impossible luxury by many farm housekeepers.

The part of the second floor over the kitchen and washroom is occupied by the two bathrooms and a bedroom intended for the hired man. The convenience of having one room set apart for hired help is felt when it comes to furnishing. The family rooms become filled with personal belongings which should not have to be disturbed, and it saves a great deal of work if sleeping quarters are always ready for the regular man or extra help. From the back stair landing a door opens into this room, another into the main hall, and another



The Second floor plan.



The Cellar plan.

to the attic stairs. Between the men's bedroom and bathroom we have a good roomy closet in the space over the stairway and under the attic stairs.

The rest of the second floor is taken up with four bedrooms and a long hall leading from the front stair landing to the centre of the building and down to the little hallway at the top of the back stairs. This, while it separates the rooms, makes a main thoroughfare and gives just the connection we want. So far as possible we have kept the partition walls directly over those downstairs, a feature always appreciated by the builder.

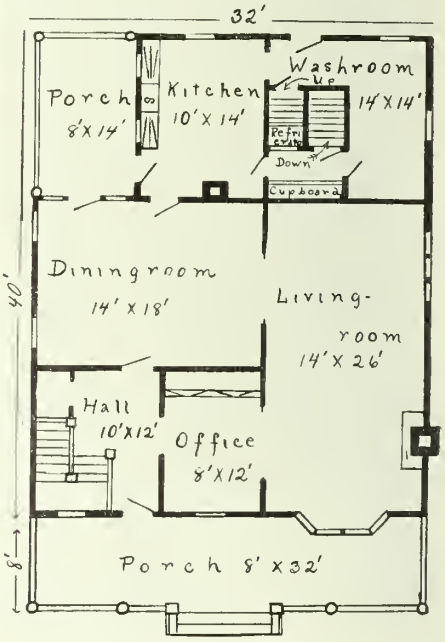
In the cellar we have the door to the food room, just at the foot of the stairs, with the milk room opposite and convenient to the outside door. With the kitchen sink directly above, it is an easy matter to have a cold water faucet in the milk room. The furnace is placed about the centre of the building and facing the coal bin. The apartment where the vegetables and fruit are kept is farthest from the entrance, making the work of storing these a little extra; but this is all done in a week or two every year, while the other rooms are used every day.

There may be features in this plan that are not absolutely necessary, but if we want to make a home the best place to live in, we do not stop with the bare necessities, particularly if it is a farm home. Unlike the urban dwelling, it is the centre of our life-time work and social pleasure as well as of our family life, so it deserves whatever we can afford to make the work easier and the living better. It is more than a house, it is a vital force in about the only real happiness we ever have, the most intimate and wonderful of human experiences.

IN FLOWERDOM

Ho! for the larkspurs, purple and yellow;
The double daisies in flaming line;
The waxy bleeding hearts, plump and mellow;
The trembling cups of the columbine;
The stalwart phlox in the garden set;
The dreamy scent of the mignonette;
And there by the hedgerow—Hark, O hark!—
The ghostly primroses burst in the dark.

Ho! for the rumbling, fairy thunder
Of bumble bees in the scented bowers,
Where, maudlin-winged, they bump and blunder,
Drunk with the honey of cosmos flowers;
And humming-bird moths sing "Zoom" and "Zoom,"
Over the banked petunia bloom;
And the bold nasturtium climbs and tells
Its tales to the Canterbury bells.



The Ground Floor plan.

Beef and Buffalo Robes

Some Results of the Experiments of Crossing the Bison with Domestic Cattle—Cattalo, the New Animal

By MOSSOM BOYD

In the present beef scarcity those efforts on the part of a Canadian, Mossom Boyd, on his island farm near Bobcaygeon will be fully appreciated. He has experimented with the crossing of the buffalo with the native cattle in a most scientific manner, and has obtained results worthy of his efforts. He has here told his story to Farmer's Magazine readers. Mr. Boyd has recently been honored by a similar article in the magazine of the American Genetic Association.

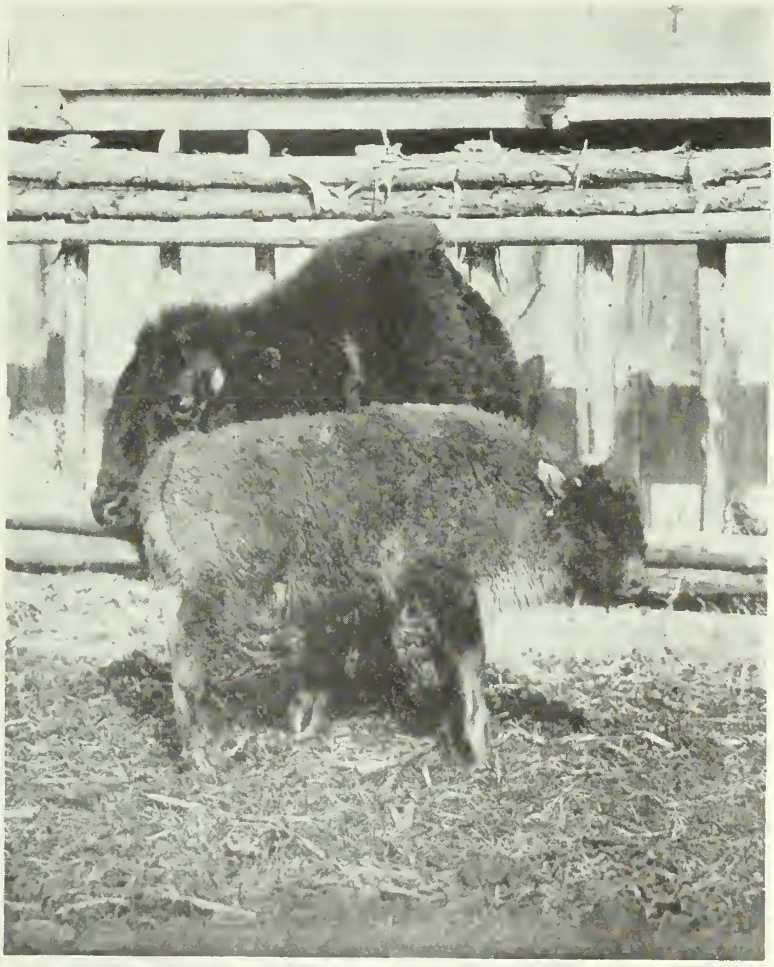
WHEN in 1908 I gave an account of my firm's experiment up to that date in crossing the American bison with domestic cattle, we had just begun the third stage of the experiment; and although four years in a work of this kind is too short a time in which to accumulate much data of interest, I will nevertheless give what little there is to tell.

The first stage of the experiment was the crossing of the two species.

The second consisted of crossing the hybrids thus produced with pure-bred animals of both species.

And the third stage, in which we are now engaged, consists of breeding from parents both of which are of mixed blood.

The produce of the first stage in which both parents were pure we call hybrid buffaloes or half-bred buffaloes, or, for short, hybrids. The produce of the second stage, in which one parent was pure and the other of mixed blood, we call three-quarter buffaloes, quarter-buffaloes, or one-eighth buffaloes, as the case may be, reserving for the sake of distinction the term "Cattalo" for the produce of the third stage, in which both parents are of mixed blood; and we put before the word cattalo a figure to denote the proportion of bison blood; for example ½ cattalo (containing 50 per cent. of bison blood), ¼ cattalo (containing 25 per cent.), etc. Breeders will readily understand that there is a radical difference between what we now call cattaloes and ¾, ½, ¼ and ⅛ buffaloes. Excepting two or three, we have not been raising animals carrying less than ⅛ of buffalo blood.



A true Cattalo calf and its mother. The sire was a grade Buffalo, while the mother is a three-quarter Buffalo. This calf, having mixed blood in both lines of ancestry, is therefore a true Cattalo. This picture was taken on the ranch of Mossom Boyd Co. at Bobcaygeon, Ontario.

GENERAL APPEARANCE OF THE CATTALO.

In the first stage the hybrids, of which we succeeded in raising about thirty, were all of one type, so uniformly alike that individuals of the same color were as hard to distinguish from one another as as Polled Angus cattle. Those from Hereford dams had white faces, but almost no other white; and excepting these, all were practically whole-colored, and were either brindled or black. The black was not the jet black of the Polled Angus, but had a rich tinge of brown. The brindled varied between a tawny red and brown.

The hybrids were larger than the bison; of "smoother" build, wider chested; had better hind quarters; stood straighter on their hocks; and had coats of a better color, with more lustre and less tufted. Altogether, they were much finer looking animals than the bison.

The ¾-buffaloes, got by using a bison bull on the hybrid females, were likewise all of one type; as much like one another as are Polled Angus cattle, and they were about midway in appearance between their parents. The five we raised (1 bull and 4 females) were in color very much like the bison, but of a somewhat darker shade. One, whose dam was half-Hereford, had the front of its face white.

The ¼-buffaloes got by using Polled Angus and Hereford bulls on the hybrid females were all of one type in form, but varied in color, and likewise were about midway in appearance between *their* parents. The same remarks apply to the ⅛-buffaloes got from a second cross by the same breeds of domestic bulls.

An ordinary observer might mistake the ¾-buffaloes for bison, and he would scarcely distinguish the ¼-buffaloes from domestic cattle except for the finer quality of hair. The ⅛-buffaloes he would not distinguish at all from domestic cattle.

Accordingly, in stage 1 we got animals that were all of one type. In stage 2, animals that were all of one type or all of another, according as we used the bison bull or the domestic bull; and the proportion of bison blood always determined the measure of likeness to the bison.

In stage 3, as was expected, the proportion of bison blood no longer determines the likeness to the bison. We have two ½-cattaloes, yearlings, quite as like the bison as are our ¾-buffaloes; and among twelve cattalo calves of 1912 are a ½-cattalo, a ⅜-cattalo and a ¼-cattalo, which notwithstanding their difference in grade with respect to bison blood, show equally the bison characteristics.

The ¼-cattalo has, we think, somewhat the best coat of the three.

This is encouraging especially in these early matings, and seems to warrant the

A large white-faced animal from one-quarter Buffalo and three-quarters Hereford cow and pure bred Buffalo which makes him five-eighths Buffalo.

expectation that in later generations, after there has been time for selection, there may be seen on cattaloes having 10 per cent. or less of bison blood as good fur as is now seen on the ½ and ⅜ buffalos.

THE BEEF POSSIBILITY.

Moreover, there is a promising prospect of greatly improving the beef carcass also, for the bison carries an exceedingly high percentage of beef on the back, which is the most valuable part of a beef carcass and the inheritance of this quality may well be encouraged by selection. The hump of the buffalo is not a mass of fat, as some people suppose, but is formed by neural spines, in length fully double those of domestic cattle and by the huge muscles which lie alongside and fill up the angle between these neural spines and the ribs. In a rib roast of beef these muscles constitute the upper cut, and I have had on my table a hybrid roast with an upper cut 9 in deep.

I give the measurements of the length (measured from the centre of the spinal cord) of the neural spines of the smallest of our three bison bulls. They are in inches respectively:—11 in., 16½ in., 16½ in., 16 in., 15½ in., 14¼ in., 13in., 10½ in., 9½ in., 8 in., 6¾ in., 4¾ in.

On the subject of fertility or infertility of bulls I have not much data. The percentage of male births in the first stage was so small as to be remarkable and excite curiosity as to a possible cause. Out of forty-five hybrids only six were male, i.e., about 15 per cent., and we may add to this experience that of Mr. Chas. Goodnight, who wrote me in 1900 that he had raised many female hybrids, but had never one male born alive. Of our six, three died at birth, one within 24 hours, and of the two raised one proved barren, after having been thoroughly tested. The other was killed at an early age without having been tested.

In the second stage the proportion of male births rose to 40 per cent. Out of twenty-six ¼-buffaloes, ten were males. Of these only four were tested and one of the four was found normally fertile. The other three were barren up to thirty-six months, thirty-two months, and twenty-five months of age respectively, but should have had a longer trial.

Of five ¾-buffaloes one only was a bull, and this bull born in March, 1905, was killed by an accident in September, 1908, i.e., at the age of 3½ years. Although given a fair opportunity during the seasons 1907 and 1908, he did not appear to be fertile, but should have been further tested.

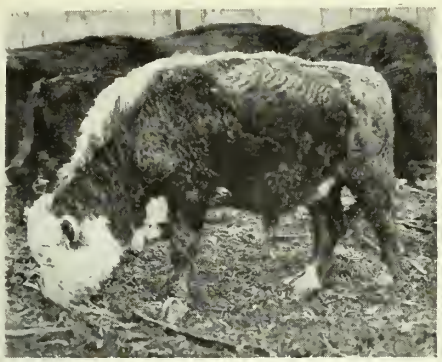
Of ⅛-buffaloes, the only one tried was thoroughly fertile.

One ⅝-buffalo bull was bred in 1905 from the cross of a bison bull upon a ¼-buffalo cow. This cross was interesting as being our nearest approach to a repetition of the severe cross of the first stage. It proved that the 25 per cent. of bison blood in the cow was sufficient to make the cross perfectly successful; for gestation was normal and the bull is more or less fertile. We had one calf by him in 1911 and four in 1912. His pedigree is interesting and I give it here:

PEDIGREE OF THE ⅝-BUFFALO BULL QUINTO PORTO.

Brindle with white face, born May 23, 1905.
Sire Banff 2nd (a pure bison).
Dam Quarto Prettymaid, by Tecumseh, 63518 Am. Hereford Record.
G.d. Hybrid Prettymaid, by Bonie (a pure Bison).

A Hybrid cow one-half Buffalo and one-half ordinary cow. The Hybrids average rather larger in size than either parents. Their meat is said to be indistinguishable from beef of the same cut and quality, but they produce more of it and the cuts are considerably choicer.



A Hereford. He is five-sixteenths Buffalo. It is from such crosses as these, or one generation further removed that it is hoped to improve the range cattle of the colder parts of the West, increasing their hardiness and improving their meat production and fur-producing qualities.

3 d. Prettymaid 19th, 55397 Am. Hereford Record, by Cherub 4th, 32333 Am. Hereford Record.

It will be seen that he is a mixture of pure Buffalo and pure Hereford blood. He is a whole-colored brindle except for the white front of his face; and, like the hybrid, he is larger and "smoother" in build than an average bison bull; is wider between the front legs and thicker through the quarters; stands straighter on his hocks, and has an immense back.

We have a yearling bull by "Quinto Porto" out of a registered Hereford cow.

Of twenty-four hybrid cows, fifteen were barren, and of the remaining nine only three were regular breeders. These three, all born in 1895, are now nineteen years old, and were regular breeders up to last year, having to their credit nine, ten, and twelve calves respectively.

Of twelve ¼-buffalo cows got by using domestic bulls on the fertile hybrids, only one was barren, four were irregular breeders, and seven normally prolific.

Of four ¾-buffalo cows got by using a bison bull on the hybrid females only one proved barren, and this one was by a sire which was himself a very poor breeder, for he got no other produce, although he had the run of the herd for four months.

Of five ⅛-buffalo cows, one was beefed at 4½ years of age without having bred, and four were found normally fertile.

As to the fertility or infertility of cattalo bulls we have no information at all. Of seventy-three cattalo births to date, thirty were bulls. Six of these are being kept for testing, but no testing has been done yet. The first females have just come to the breeding age. Of two born in 1907, one gave a calf in 1911 and the other was sent to the butcher, December, 1912, as being probably barren. Of four born in 1908, only one has given a calf as yet. We have besides a calf from a three-year-old and one from a two-year-old. This is sufficient to indicate that even if not so much so as the grade buffaloes (hybrids excepted), which were just about normal, the cattalo females will be fairly fertile, and there is little doubt as to finding a sufficiency of fertile bulls. Complete fertility, if it is not found at once, will doubtless come through selection, as will early maturity.

Quinto Porto. Five-eighths Buffalo and three-eighths Hereford.

It does not seem unreasonable, therefore, to suggest that the fur of the bison and his great back may be carried by means of selection without any diminution through succeeding generations of diminishing bison blood until the coat and hump have been practically taken from the bison and placed upon the back of the domestic ox.

Spanish Gold

By GEO. A. BIRMINGHAM
Illustrated by DUDLEY WARD

The Story of a Search for Treasure on the Coast of Ireland and the Amusing Situations which Arose

SYNOPSIS OF PREVIOUS CHAPTERS

The Rev. J. J. Meldon, curate of Ballymoy, a village on the west coast of Ireland, while visiting his friend, Major Kent, comes across an old pocket-book of the Major's grandfather, in which he finds an account of some treasure, supposed to have been hidden by the Spaniards of one of the vessels of the Spanish Armada on the Island of Inishgowlan, and they decide to take a trip to the island to search for the treasure. On arriving at the island, Meldon and the Major find Higginbotham, an old college chum of Meldon's, engaged in surveying the island for the Government, and dividing it up into allotments. Meldon, not wishing to divulge the reason of his visit, tells Higginbotham the Major is a Government mineralogical expert who has been sent to examine and report on the island's mineral resources. Meldon and the Major start to explore the island and they find an inlet with a hole, which is only visible at low tide, and here Meldon decides the hidden treasure must lie. The following day Meldon starts for the inlet and the cave, and on his arrival discovers a man, who is being lowered over the cliff to the entrance of the cave. This turns out to be a Sir Giles Buckley, who is with Langton, a friend. Sir Giles is the son of a neighbor of the Major's who had lately died. Sir Giles would also have heard of the treasure, as his grandfather was a friend of the Major's grandfather, and had visited the island with him. After some discussion, Sir Giles calls out to Langton to haul him up, and both he and Meldon depart, as the tide has nearly covered the hole in the rocks. The next day Meldon, in order to steal a march on Sir Giles and Langton, and visit the cave without interference, sends Higginbotham off to the mainland on a trumped up story of Sir Giles being a Government health inspector and requiring particulars of some tuberculosis patients there. He also sets the punt adrift from Sir Giles' yacht, so that the latter cannot get ashore. On going ashore he finds two pairs of oars, which he hides by thrusting them through the window of Higginbotham's building. To this the Major objects, and it is at this point the narrative is continued.

CHAPTER XII.—*Continued.*

"WHAT is burglary? Isn't it taking a man's own things out of his house when he's not looking? You agree to that definition, I suppose. Very well. What am I doing? I'm putting other people's things into a man's house when he's not loking. Now that's just the exact, bang opposite to what burgling is. Therefore, I'm not a burglar. In fact, I'm the very antithesis of a burglar. You may not know what an antithesis is, but——"

"I do know, so you need not trouble to explain."

"Very well, I'll pursue my line of reasoning. Burglary is wrong. You hinted that yourself a minute ago. But the antithesis of wrong is right. What I'm doing is the antithesis of burglary. Therefore——"

"There's no need to go on talking that rot," said the Major. "It doesn't impress me in the least."

"I feared it wouldn't. Never mind, Major, even if you don't pocket a single doubloon—and I'll be greatly surprised if you're not weighed down with them before morning, but even if you don't pocket one, you're getting a liberal education. The things I've told you about geology, entomology, theology, ethics,

and philosophy in general, since we came to this island would set up an ordinary professor handsomely."

Meldon slung the folded punt across his shoulders, took a last look at the Aureole and started to tramp up to the head of the path which led down the cliff to the western beach of the island. Major Kent, with the paddles, the rowlocks, and the basket which contained the breakfast, followed him. The inhabitants of Inishgowlan are not early risers. A few women peered out through the doors of the cabins. Nobody attempted to speak to them or follow them. Neither Thomas O'Flaherty Pat nor Mary Kate appeared at all. Meldon and the Major walked rapidly. At the top of the cliff they paused.

"We're pretty safe now," said Meldon, "and we'll take a few minutes' rest, but we won't breakfast till we're down among the rocks."

He swung the punt off his shoulders as he spoke, sat down and wiped his brow.

"If I'm not mistaken," said the Major, "there's some one on the deck of the Aureole now."

He dangled in mid-air, hands and feet hanging down.

Meldon stood up and looked eagerly.

"There is," he said. "You're quite right. See now, they're both on deck. Well, they can stay there."

"What'll they do now?"

"Shout, I should think. I can't myself see what else there is for them to do. Sir Giles might swim, but it's not likely the other fellow can. That sort of man never does anything really useful. Anyway, if they do swim, they can't carry all their tackle with them for getting down the cliff. All the same, I think we'll move on a bit."

"I'm inclined to go back to them," said the Major. "I don't like—— After all, they've not done anything to us."

"It's not what they've done so much as what they want to do which makes me determine to keep them there. Recollect, Major, they're after the treasure."

"Well, haven't they as good a right to it as we have? I like to play fair."

"They have not as good a right as we have. I deny that entirely. Think of the use those fellows would make of the treasure if they got it. You told me yourself that Sir Giles was a bad hat—so bad that his own father left the family property away from him, as much of it as he could. Langton's no better. You heard what Higginbotham said about his drinking, and he must have a hideously corrupted mind after poking about for years among those manuscripts in the College Library. You don't know how bad most manuscripts are. That's the reason they remain manuscripts. No decent printer would set them up in type. I tell you, if those two fellows get a hold of the treasure, they'll spend it in ways that will make the Spanish captain shiver in his grave, and I don't expect he was exactly a squeamish man. It's nothing but a public duty to prevent their getting a hold of the money, even if we never touch a penny of it ourselves."

"I don't see what all that, even if it's true, has to do with their right to take the treasure if they can, always supposing there is any treasure to take."

"I wish you wouldn't qualify everything you say with a whole string of 'ifs.' It robs your conversation of piquancy. But come on now. We must get out of this. They might see us with their glasses. When we've had our breakfast, I'll explain to you why Sir Giles has no right to the treasure."

They made their way down the steep path and reached the rocks at the foot of the cliff. Meldon laid the punt down carefully. The basket was unpacked and a sufficient supply of bread, butter, sardines, potted meat, and jam were spread out on a flat stone. For a while Meldon ate without speaking. An early swim, a long walk, and an hour or two of anxious excitement, whet a man's appetite for breakfast. Major Kent began to hope that he would escape an explanation of his own moral right to the treasure. He was disappointed. Meldon, his appetite sated, lit a pipe and leaned back comfortably against a rock.

"We may as well take it easy for a bit," he said. "The tide won't be out far enough to let us get into that hole for another two hours, and it won't take us more than one to get there."

He smoked contentedly for a few minutes and then began to speak again—

"You read the Times, Major, so I suppose you take some interest in politics."

"I know that the Nationalists are blackguards; if that's what you mean."

"I'm not talking now of these petty little local squabbles. When I say politics, I refer to the great stream of European thought, to the wide movements discernible among all civilized peoples."

He waved his hand towards the ocean to indicate the immensity of his subject.

"I don't know anything about that," said the Major.

"I thought you wouldn't, but you ought to. Are you aware that our modern civilization is on the very verge of a bust-up? No? Well, it is. The Governments of the various countries are, generally speaking, unaware of the catastrophe which threatens them; or, if they guess anything, are foolish enough to think that they can stifle an explosion by sitting on the safety-valve. You catch my meaning, I suppose?"

"You appear to mean," said the Major, "that all Kings, Princes, Presidents, Prime Ministers, and Parliaments are fools."

"Precisely. They all are."

"It's a pity you don't tell them so."

"I will. I've always intended to tell the first one I met. Look at Russia. Chock full of anarchists and nihilists. Look at Portugal. They're murdering kings and rioting in churches. Look at Finland, admitting women to their Parliament; not that I object to women in the way you do, Major. I think they're all right in their proper place. I only quote Finland as an instance of the general tendency I'm speaking of. Look at New York, with its Socialist riots. Look at Austria-Hungary, or Italy, or any other country you choose to name. Look at the Labor Members in the English House of Commons. Now what does all that mean?"

"I don't know in the least, and I don't care. Things were always pretty much the same. There's nothing new in the condition of the world that I can see."

"You may not see it, but there is. We're on the brink of a revolution—the biggest thing of the kind that there has ever been. And the cause of it is the concentration of wealth in the hands of a few people who are using it for purely selfish purposes. Any student of sociology will tell you the same thing. It's a well-known fact. Now what is our duty under the circumstances? What is the duty of every well-disposed person who values the stability of civilization? Obviously it is to prevent the selfish, depraved, and fundamentally immoral people from acquiring wealth; to see that only the well-intentioned and public-spirited get rich. That is the general principle. Now apply it to the particular case we are discussing. On this island there is untold wealth in solid gold."

"I suppose," said the Major, "that I shall come to believe that in the end. I hear it so often that I shan't be able to help myself."

"There are just two parties who stand a chance of possessing themselves of it. There's no one else in the running for this particular scoop."

"What about Higginbotham and Thomas O'Flaherty?"

"You might just as well say, What about Mary Kate and Michael Pat? They're not in it. Higginbotham is a Government official, to mention only one point, and is so much occupied in ameliorating the condition of the people that he simply wouldn't have time to spend the money, even if he got it. No. There's us and there's Sir Giles and Langton. That's all. Now, ex hypothesi — you know what I mean by ex hypothesi, don't you?"

"I do, but don't let that stop you if you have any fancy for explaining it. I shan't mind listening."

"Your suggestion, Major, as one of the members of our District Council said the other day, when some one accused them all of being drunk, is quite uncalled for. It's only for your sake, to quiet your conscience about the treasure, that I'm going into the matter at all. My own mind is quite clear. I haven't any doubts about Sir Giles."

"If that's all, you needn't go into it any more."

"All right. I won't. Have another sardine? There are two left in the tin. Now that I've finished my pipe I feel that I could do with one of them. In fact I could manage them both if you don't want the other."

"I don't."

"Sure? Oh, well, rather than let them go to waste, I'll eat them."

He took them one after the other by their tails, and throwing his head back, dropped them into his mouth. With his penknife he scraped out of the pot some fragments of jam which lingered near the bottom. There was no more bread. Having finished this scanty second breakfast he stood up and stretched himself. Then he announced that it was time to start. Major Kent rose unwillingly and took up the paddles. Meldon swung the punt on to his back again.

"No sign of old T. O. P. this morning," he said. "We've successfully given him the slip. I expect he's cowering in his gloomy cabin, meditating on fresh ways of defeating Higginbotham. Sir Giles and Langton have probably stopped shouting for help by this time. They're too hoarse, I expect, to shout any more. They are now reduced to gnashing their teeth silently and muttering frightful oaths. Higginbotham is searching for bacilli on Inishmore. Poor Higginbotham! I'm afraid it'll be a dull and trying day for him. But we'll make it up to him afterwards. Mary Kate is, I hope, doing her duty by her little cousin Michael Pat and making things a bit easier for young Mrs. O'Flaherty. When we get back to Ballymoy, Major, we'll send a good stiff bottle off to the old woman. Remind me of that, will you, in case it slips my memory. On the whole, things look rosy for you and me—a great deal rosier than I ever recollect them looking before. Come along now, we've no more time to waste."

CHAPTER XIII.

It is not easy to carry a punt—even the kind of punt that folds up — over rugged and slippery rocks. Meldon stumbled frequently and fell three times. He cut his elbow and reopened the rent in the knee of his trousers which he had laboriously sewed up after his first expedition round the coast of the island. His cheerfulness was untouched by misfortune. His energy carried him far ahead of Major Kent, who had the lighter load. Even when he found himself on his hands and knees among seaweed and pools he preserved the punt from injury. He arrived at last at the point on which he had decided that the Spanish galleon must have struck, scrambled round it and reached the ledge of rock above the channel. He was breathless, disheveled, and so hot that he wished very much to swim rather than row to the hole in the cliff. He put the temptation aside. Major Kent, laboring heavily with the paddles over one shoulder, appeared at the corner. Meldon unfolded and stretched the canvas punt. He made fast the rope, which he had used as a sling, to the ring in her bow, and launched her very carefully. He insisted on embarking at once when the Major arrived.

"No sign of any one swinging down over the cliff to-day," he said, looking over his shoulder as he paddled up the channel. "Sir Giles is otherwise and perhaps less innocently occupied. He is certainly swearing frightfully. He is very likely at this moment cutting Langton's throat."

"It isn't Langton's throat he'll cut. Langton didn't set his punt adrift."

"I dare say he'd rather cut mine if he could, but in the sort of temper he's in at present it'll be almost necessary for him to murder somebody at once."

"But what has he against Langton?"

"Oh, you can't always account for deeds of that sort. They are what the French call crimes of passion. By the way, did you ever read Lombroso on Crime? You ought to. He's a tremendous fellow for the physical characteristics of the criminal. I'd like him to have a look at Sir Giles. I expect—— Hullo! here we are!"

The punt grounded at the very mouth of the hole. There was still a few inches of water in the entrance, and the little beach on which Sir Giles had stood two days before was not yet uncovered. Meldon stepped out of the punt, knelt down, and peered into the hole.

"It's all right," he said. "We can get in easily. It doesn't matter if we get a little wet."

He took the painter of the punt in his hand and crawled into the hole. In a couple of minutes his voice, sounding hollowly, reached Major Kent.

"Come along. It's only the entrance that's really narrow. It's quite a large cave when you're inside, and not nearly so dark as you'd expect. You don't have to crawl more than a few yards in the water. The ground rises rapidly and it's quite dry where I am now."

Major Kent disliked very much the idea of crawling even a few yards through water; but he knew that it was no use holding back. Meldon was quite capable of emerging and dragging him by main force into the hole. Very unwillingly he stooped lown and crept forward.

"It's not a bad place, is it?" said Meldon, "and a pretty good size. You can sit straight up here and hardly bump your head at all."

He fade fast the painter of the punt

to a large stone as he spoke. "She'll be all safe. The tide will leave her high and dry in another half-hour. I wonder how far this cave goes? I expect the Spanish captain dumped his treasure right at the far end. Come along."

It was difficult to get along at first. Walking over large round stones which roll about when trodden on is never easy. It becomes extremely troublesome when it is only possible to proceed either on all fours or bent double—when the roof is so low that an unguarded movement results in a blow on the head. But things got pleasanter after a little while. The ground sloped rapidly upwards. Meldon and the Major were soon above high-water mark. Then the stones on which they walked were no longer so smoothly rounded and were much less liable to roll.

"What beats me about this cave," said Meldon, "is that it isn't darker. It doesn't seem to get any darker either as we go on."

The roof rose higher. It became possible to walk upright. Major Kent stretched himself at last to his full height and looked round him. The rocks on each side had widened out, leaving a space between them. They and the roof were quite visible in a dim light which came from the depths of the cave.

"It's interesting to think," said Meldon, "that the last human feet which trod these stones were those of the Spanish captain and his crew. It must have been tough work dragging the cases of bullion along through that narrow part. We can't have much farther to go now. I see what looks like the end in front of us. But I can't understand where the light comes from."

He went on a few yards and then gave a sudden shout—a kind of cheer—half-smothered by excitement. He ran forward, stumbling desperately among the loose stones, but picking himself up and bounding on with outstretched arms. Major Kent, stirred at last out of his grumbling indifference, ran after him. Meldon stopped abruptly. Before him, laid on a slab of rock at the side of the cave, were two iron chests. Their lids stood wide open. They were perfectly empty.

"Good God!" said Major Kent, "there was something here after all. I must say, J. J., I didn't believe in your treasure till this minute, and now it's gone."

"It's gone," said Meldon, "but it can't be gone far. Every argument for believing that it's still on the island holds good. Don't you lose heart. What we've got to do now is to turn to and find out where it's gone and who's got it."

He took another glance at the empty chests and then looked on from where they lay.

"This isn't the end of the cave," he said. "It takes a sharp bend to the right. See how the light coming round the corner, strikes that wall. Let's go on and see where the cave does end and where the light comes from."

"I don't see," he said as he stumbled on, "how Sir Giles can have got it. I've watched him like a cat does a mouse. The only time he got away from me was yesterday afternoon when he went up to Thomas O'Flaherty Pat's house, and I had Mary Kate watching him then. Great Scott! What's that?"

The crash of some heavy body falling on the boulders set the whole cave echoing. Meldon stood still in astonishment.

"If you ask me," said the Major, "I should say that the roof's falling in. We'd better clear out of this while we can."

"I don't care," said Meldon, "if the roof does fall in. I don't care if the whole island crumbles into bits and comes rattling down on top of my head. I'm going to see this business through."

He went forward very cautiously, peering in front of him, until he reached the place where the cave bent to the right. He stood still for a minute. Then he turned and went back to where the Major waited.

"It's Sir Giles," he said. "He's come down through the roof, and he's standing there looking up while something is being lowered to him. I have it, Major. The hole in Thomas O'Flaherty Pat's field! Mary Kate told me they were looking at it yesterday. What an ass I was not to think of it before. Of course it opens straight down into this cave. It couldn't do anything else. Why didn't I think of that sooner? Come on, now, Major. As Sir Giles is here, we may as well have a talk with him."

Taking Major Kent by the arm he stepped forward, turned the corner, and came in sight of Sir Giles Buckley, who was lighting a lantern. Meldon recognized it at once as the riding-light of the Aureole.

"Good-morning, Sir Giles," he said. "You won't need that lantern. The cave is quite light."

Sir Giles started and turned quickly.

"Oh, it's the damned parson," he said. "I more than half expected you'd be here."

"I don't mind owning," said Meldon, "that I did not expect to see you. You swam ashore from the yacht, I suppose."

"No, you didn't expect me. I dare say you thought you had me boxed up for the day when you played that fool's trick, setting my punt adrift."

"It's my punt, not yours. But as we're on the subject of the punt, how did you get ashore?"

"As soon as I found she was gone," said Sir Giles, "I got up the mainsail and went after her. Any one who wasn't a perfect ass would have known beforehand that I'd do that. You must think that everybody in the world is as big an idiot as you are yourself. Did you suppose that I'd sit still and whistle hymn-tunes until you came back and put me ashore?"

"I didn't suppose anything of the sort. I thought you'd swear every oath you knew five or six times over, and then cut Langton's throat."

"You driveling imbecile!"

"Go on," said Meldon, "call me any other name that occurs to you. When you've finished perhaps you'll walk down the cave a bit and I'll show you whether I'm a fool or not."

He turned and walked away, followed by Major Kent. Sir Giles eyed them doubtfully for a minute and then went after them. When he reached the slab of rock on which the chests lay, Meldon turned and made sure that Sir Giles was at his heels. With a dramatic gesture he pointed to the chests.

"Empty, Sir Giles," he said. "Look in and make sure. Quite empty."

"Have you got the stuff?" said Sir Giles. "Damn it! you can't have it. I don't believe you've touched it."

"Believe whatever you like, but there's one thing you may bet on with perfect safety. Whether we've got it or not, you haven't, and what's more you never will. Now, who's the fool, the ass, the idiot, and the driveling imbecile?"

Sir Giles glared at Meldon. It was evident that he was in an extremely bad temper. His face became first white and then crimson. He opened his mouth to speak, but no sound issued from it except a sort of hoarse gurgle produced apparently far down in his throat.

"Don't let your temper get the better of you," said Meldon. "It's foolish, besides being bad form. And remember what I said to you the day we first met about swearing. Excuse my reminding you of that, but I can't help thinking that you mean to curse as soon as ever you can. You have all the appearance of a man who is struggling to find expression for strong feelings of some kind."

Sir Giles stuttered out an oath. Having succeeded in giving utterance to one intelligible syllable, he obtained all at once complete command of his powers of speech. He poured forth a series of voluble imprecations and expressed hopes for Meldon's future which would have startled the author of the most emphatic of the Psalms. He was interrupted by a loud crash from the depths of the cave. He started violently.

"What the devil's that?"

"It's uncommonly like the noise you made yourself when you came down through the roof. My own opinion is that it's Langton. He'd be likely enough to drop in to see that you didn't sneak off with any more than your own proper share of the treasure. Come along and we'll see."

He went up again to the place where he had met Sir Giles. Langton, who had descended very much more rapidly than he wished, sat on a stone nursing a bruised knee.

"Good morning," Mr. Langton," said Meldon. "I'm delighted to see you. I hope you haven't hurt yourself. As far as I could judge by the noise, you must have come down rather hard. However, I'm glad you're here. You must take Sir Giles in hand and look after him a bit. He very nearly had a fit just now. You ought to see to it that he takes some kind of cooling medicine three times a day—bromides, or castor-oil, or something of that sort. Any chemist would make the mixture up for you if

Continued on Page 76.

Marketing Grain on Foot

Some Examples of the Profit to be Made from Feeding Grain to Lambs, Cattle and Hogs. One Reply to the $2.00 per Bushel Wheat Article in the April Issue

By MACKENZIE HALL

THE returns from feeding grain to animals are always interesting. It would be useless and a most fatalistic farm doctrine, if the marketing of grain on foot did not allow the farmer good wages for the work. Whether wheat will yield him $2 a bushel or other grains proportionately, will depend in a large measure upon the farmer's own ability to manage successfully.

First of all he must buy or raise the livestock. This requires a careful and shrewd judgment. To buy right, the old feeder will tell you, is half the problem.

Then again, there is the question of proper feeds and of the proper knowledge of an economical ration. Any farmer can shove grain and hay into the mangers, but it takes brains to put there just enough and no more to produce results. Here is where many a leak and loss takes place. Animals often waste more than they profitably consume as every feeder well knows. An animal should have the healthy appetite to clean up all set before it and be ready for the next meal from a clean manger.

There is thirdly, the selling end of the game. A man may be a good buyer, a good feeder, yet be a poor salesman, and so his profits vanish like snow in June. A successful salesman must be in touch with the markets, not only in his locality, but the coming situations in the big producing countries. This knowledge allows him to get on to the market early or to hold for a coming rise.

It is easily seen then, that the feeding of grain for better prices depends upon a great deal inherent in the farmer himself. Yet many farmers are coining money by feeding.

Perhaps the easiest way of making returns upon animals is by pasturing. It is easy to allow cattle, sheep, and even horses to put on fat and growth on the pasture. They take the minimum of attention and risk. Some of the many who are now doing summer feeding say they have to exert every ounce of their judgment, in buying and selling, in order to pay good interest on the whole proceeding.

Many farmers in Canada have placed carlots of cattle on pasture this spring. Some find thin cows the best means of making gains. Others think the shortkeep feeders best, as they are ready for any possible rise in prices during the scarcity months of July and August. Then again others will buy thin stockers, hold them all summer and feed the coming winter to make the most.

Here are a few examples of the cost to produce meat as found out by leading experimenters and farmers.

VARIATION IN HOG COSTS.

The Kansas Agricultural College has just completed an exhaustive test in hog feeding. Of course corn enters largely into all U.S. feeding experiments.

It has been found that it costs $6.45 to produce 100 pounds of pork, if corn is worth 55 cents a bushel.

When pasture is used, such as alfalfa along with a meal feed it costs only $4.10 per 100 pounds. With corn, shorts and tankage without pasture the cost is $4.70.

It was found that when corn was used along with meat meal and tankage it returned a value of 80 cents a bushel. When shorts were used, the corn received a value of $1.07 a bushel.

ONE POUND TOOK 4.23 POUNDS.

The Purdue Experiment Station has gathered considerable information. In the summer of 1912, shotes approximately four months of age and weighing 52 pounds were fed 160 days. The average daily gain was 1.02 pounds and the feed required to make a pound of gain 4.38 pounds. Shotes approximately six months of age and weighing 102 pounds were fed 130 days. The average daily gain was 1.11 pounds and the feed required to make a pound of gain was 4.4 pounds. Hogs approximately nine months of age and weighing 156 pounds were fed for 90 days. They produced a daily gain of 1.33 pounds per head and required 4.8 pounds of grain for each pound of gain. Hogs approximately twelve months of age and weighing 217 pounds were fed for 40 days. The average daily gain was 1.72 lbs., and the grain expenditure was 4.23 pounds.

The Herefords are good feeders and put on valuable meat during the grass season.

FATTENING LAMBS.

Joe Wing, the well-known agricultural writer of Ohio and the proprietor of Woodland Farm, has fed lambs since 1891. His last experiment is told by himself in a recent issue of the *Breeders' Gazette*.

"Last fall we filled the sheds with 1,500 Western lambs, rather better in class than we have usually been able to secure, doubtless due to the discrimination of our commission company's buyer. The lambs appeared to be a cross from Lincoln rams and Western Merino ewes; some may have had Romney blood. Our alfalfa hay was better in quality than common, due to the dry summer. The lambs throve, getting nearly all the alfalfa they would eat and a fair amount of corn, but never all that they would eat of that. They weighed 53 pounds when we bought them and 96 pounds when we sold them in early April. The total weight of mutton and wool produced (we did not shear this year) was 64,200 pounds. We have made more than 70,000 pounds, but then we held the lambs a month longer. This year the death loss was very slight. These lambs "made money," as men commonly figure profits, yet we are not very much elated over the result. For instance, they consumed the hay and corn from about 135 acres. True, last year was a dry year and alfalfa was short after the first cutting, and corn only three-fourths of a crop, but we took only about 475 pounds of lamb mutton from an acre. As we sold for eight cents that amounted to $38 receipts per acre."

An experiment conductor of the Purdue University at Lafayette, Indiana, last year, shows that it cost from $4.36 to $4.77 to get 100 pounds of gain from lambs. The average daily gain was about one-half pound. They were bought at $8.50 per cwt. and held for 60 days.

PROFIT FROM CATTLE.

The above-named station also has made extensive experiments in cattle feeding. From several experiments they got the following results from feeding corn. Lot 1 gave a value of nearly 82 cents a bushel for corn; Lot 2 gave 65 cents; Lot 3 gave 78½ cents; Lot 4 gave nearly 86 cents a bushel for corn; Lot 5 returned 80 cents; Lot 6, 87 cents, and Lot 7, $1.03 a bushel.

Co-operation at Red Deer

The Work of Edwin Carswell, who was Dubbed a Crank for Many Years

By W. A. CRAICK

The writer of this article paid a visit recently to the West, and while in this flourishing locality in Alberta obtained the following information which will be of especial interest to those farmers of Canada who are already figuring in new co-operative societies. The United Farmer's of Ontario is a central organization which has recently been organized.

IT is eighteen years ago now since the co-operative idea was first mooted in Red Deed. After an agitation extending over four years, the dairymen of the district got together on a co-operative creamery proposition. They rented a private concern to begin with, and by holding out a cent a pound on each consignment of butter disposed of, were able in a short time to finance a creamery of their own, which is still running on a satisfactory basis.

Co-operation in creamery work is not so uncommon as to make the Red Deer scheme in any way unique. It is only referred to here because it was the beginning of a more extended movement. The man who had been primarily responsible for getting the creamery going was an enthusiastic co-operationist, and from the very beginning he had labored to spread the principle of co-operation to other transactions.

Frequently such a man is blessed or cursed with the name of crank, and Edwin Carswell, of Red Deer, has been dubbed crank for a good many years. However, he has not suffered any loss of sleep on that account, and has plodded steadily along, preaching his gospel, working disinterestedly for the welfare of his fellow-men, and patiently bearing those disappointments and reverses which are invariably the lot of him who would introduce innovations.

Five years ago the preachings of Mr. Carswell, who had, as manager of the creamery, a pretty good opportunity to spread his views abroad, bore fruit, and a society was formed for the co-operative marketing of produce. There was no legal incorporation of the society; indeed, there was no law covering the incorporation of such an organization. Each farmer who signified his willingness to join was required to sign an agreement that he would be responsible for his share of any debts that might be incurred. The document, though not legally binding, was accepted by a local banker as sufficient guarantee of the bona-fides of the signatories, and credit was extended to the management to enable them to start business.

The first year's operations were entirely successful. The plan on which the society was run called for the listing by each member of such stuff as he had to sell, whether grain, hogs, hay, or poultry. The manager, who watched the market closely, disposed of the goods to what he considered the best possible advantage, and, deducting five per cent. from the receipts, handed the rest back to the producer. At the end of six months the books were made up, and when the expenses of management were subtracted from the commissions, the balance was returned pro rata to the members of the society as profit. It was a simple arrangement, and on the face of it looked good. No capital was subscribed, and the farmer was able to sell his products more advantageously than were he to depend on his own efforts.

During the first and second half-yearly periods, the business progressed most satisfactorily, and from one to one and one-half per cent of the commission money was returned. On the third division of profits, the management erred on the side of generosity, paying out such big profits that in the fourth period of operation they got into difficulties. There were bad debts incurred, and before they knew it, instead of having a surplus to divide, they found themselves faced with a bank overdraft of seven hundred dollars and with nothing to meet it.

In the emergency a meeting was called to see what could be done. There were many absentees, men who would stand by when the sun was shining, but who would get out of the wet when it was raining. The loyal ones debated the question long and earnestly. Some were for closing out, to do which they proposed to assess losses back to the members. Others, and they were fortunately in the majority, voted to continue the business and try to make up the loss on future transactions. By holding expenses down carefully they could keep the bank quiet and in the end, perhaps, pull up once more.

The latter counsel prevailed, and the society continued to transact business on more conservative lines. At the end of six months, by practising economy the corner was turned. One-quarter per cent of the profits were assessed to form a sinking fund to wipe out the deficit, and the affairs of the society were lifted out of the hole into which they had fallen.

The experience through which they had passed taught the members the necessity for taking steps to prevent the recurrence of such a situation. The remedy proposed was to seek regular incorporation under the Joint Stock Companies Act, thereby insuring a greater degree of stability and placing some security behind the operations of the society. Accordingly in May, 1912, the Farmers' Co-operative, Limited, of Red Deer, was duly incorporated with a capital of $50,000. About forty farmers in the district put their names down for $8,000 worth of the stock, and a ten per cent. call being made, $445 was paid into the treasury. This comparatively small sum formed the working capital of the company.

Practically only half the original membership of the Co-operative Society was represented in the new organization. And more than that, several of the men who had subscribed for the stock never paid up the first call. Nevertheless, the calling of the ten per cent. was merely intended to bring out a positive membership, who would thereupon become responsible for the work of the company. It was doubtless disappointing that more of the farmers in the neighborhood of Red Deer did not see their way to give the directors better support, but as it was, enough came in to enable the company to proceed with their enterprise.

The Farmers' Co-operative made a good showing the first year. Not only did stockholders sell their produce through its office, but a large number of outsiders turned in their business as well. The result was a neat little sum to be distributed in profits. At this point a different procedure was adopted. Being co-operative, it was necessary to return profits pro rata to all who had dealt through the company. Instead, however, of dividing the cash among all, the only money distributed went to the men who had contributed cash to the treasury. A five per cent. dividend was paid to them. The balance, amounting to some $411, was retained by the management, and in its place earned stock for the amount was handed out to those farmers, not shareholders, who would otherwise have participated in the distribution. In this way the capital of the company was enlarged and the number of shareholders was increased to 155. The object in view was to make all who used the company interested in its operations.

There was necessarily this vital difference between original shareholders and those who had been shareholders by the foregoing action. Whereas the former were liable for all they had subscribed, the latter were only responsible for the sum that had been allotted to them. As but ten per cent of subscriptions had been called, it was obvious that ninety per cent more could be demanded if necessary.

The management of the company was

A general view of the town of Vernon in the Okanagan Valley, B.C. Around among the hills lies the celebrated Coldstream Ranch, while along the side of the hill may be seen the pipe line of their irrigation system. Co-operative fruit-growing societies in this section are making good. An account of their price last year may be seen in the article on page 20.

continued by Mr. Carswell along the same lines as had been found so satisfactory by the society. That is, the farmers of the district listed their stuff with him to sell; he disposed of it at as favorable a price as possible and gave them the proceeds less five per cent., which was kept out to cover expenses of management. The produce dealt in consisted for the most part of hogs, hay, grain, poultry and occasionally potatoes, and it is interesting to learn that as a result of the operations of the company the buyers of hogs for the large packing plants have all left the field. During 1913, thirty-six carloads of hogs and twelve carloads of hay were shipped out of Red Deer by the Farmers' Co-operative, while the total commission business for the year amounted to $52,000.

The company has also been responsible for a little work in the direction of co-operative buying. As yet this has extended only to coal and apples. Anyone interested who wishes to buy coal is expected to list his requirements with Mr. Carswell, and when a sufficient amount of orders have been received the quantity is secured in carload lots. Purchasers are then expected to load their own order from the cars and haul it to their homes. A price is struck allowing twenty-five cents for expenses, and the customer pays cash for what he takes. In this way a saving of from one dollar to one dollar and a half is made over the price charged by coal dealers in the town. Last fall a carload of apples from the Okanagan Valley was brought in and disposed of in a similar manner.

Owing to the determination of the Alberta Co-operative Elevator Company to undertake the co-operative selling of all sorts of farm produce and the buying of supplies in common use on farms, the work of the Red Deer Company will be taken over by the provincial organization. Mr. Carswell has been engaged by the directors of the Elevator Company to take in hand the task of organizing the co-operative department, and with his lengthy experience in Red Deer he will doubtless be able to handle the proposition successfully. So far much of the work done has been of a preliminary nature, and the plans are as yet merely tentative. But the idea will be to control everything from the head office in Calgary and have branches wherever an elevator is located. Each branch through its secretary will list such produce as its members have for sale, while their needs in the way of coal, flour, fencing, etc., will also be reported to headquarters. In this way the cumulative effect of buying and selling in large quantities will be felt.

Meanwhile some satisfactory adjustment of the Red Deer Company's affairs will be made. It is probable that the plan will be to drop all shareholders who have not paid in any cash on their subscriptions, to increase the paid-up stock by one hundred per cent., and to hand out earned shares for the amount of profits in the treasury. As the shares in the Elevator Company are twelve dollar shares, just as soon as a stockholder has twelve dollars worth to his credit he will be given a certificate in the provincial company.

That the work will be prosecuted with vigor goes almost without saying. Already negotiations are in hand looking for the purchase of the entire output of a flour mill and its sale to the members of the co-operative organizations. Arrangements have been completed for the securing and handling of lumber. There have been overtures made to co-operative fruit companies both in British Columbia and Ontario for the supply of fruit. Letters have been sent to manufacturers of wire fencing for quotations on carload lots, and, of course, the item of fuel has been receiving careful attention. Nothing will be left undone to obtain supplies at the lowest possible cost.

That the co-operative movement in Alberta owes much to Mr. Carswell and the men who stood behind the Red Deer experiment for so many years, goes almost without saying. Whether or not this particular experiment was the cause of the larger undertaking is hardly determinable, but that it had much to do with the evolution of the provincial scheme is apparent. The fact that the originator of the Red Deer society has been selected to manage the co-operative buying and selling department of the Elevator Company is evidence that what he has accomplished was thought of value.

ANCIENT INCUBATORS

For upwards of 5,000 years eggs have been hatched artificially in Egypt and China and other Asiatic countries. In Egypt the industry is an enormous one, and it is estimated that at the present time there are several hundred hatching establishments there. Many of these have a capacity for hatching 40,000 eggs at one time. The industry is in the hands of the Copts, who make quite a mystery of the whole process. The ovens are worked only from February to May each year. When the eggs are first put in the chamber, they are often piled four or five deep, but are afterwards spread out in a single layer never later than the tenth day. The eggs are turned three times daily. All are tested on the fourth or fifth day and the infertile ones taken out and sold for consumption. Usually about one-quarter to one-third of the eggs prove infertile.

The Farmer on the Platform

Some Practical Hints on Public Speaking and in Institute Discussions

By GEO. E. CLOUGH

Whether the farmer of to-day is in a better position to express his views on the platform than was his father in his day, is an open question. The debating schools, the singing schools, the temperance societies, the Patrons of Industry, and the Grange were powerful educators for young men who take an active interest in the social and political conditions of their country. The writer of this article is a Manitoba resident, and his words and hints will be most acceptable to those farmers who believe as he does that their words should be heard more in the counsels of the nation.

"THE words of the wise are as nails": necessary in nation-building.

But many a farmer's wisdom will be buried with him. It is not recorded in speech or writing.

Gold is hidden in the rock, and golden thought is often hidden in the clay.

The object of speech is to communicate thought. If you have learned nothing from life, you need never learn to speak. But any man who knows anything worth telling ought to be able to give his fellow-men the benefit of his knowledge.

This is the day of farmers' meetings, farmers' societies, farmers' conventions. The farmer is coming to the front. His voice will be heard. But the best men are not always the best speakers. Many a farmer of ripe experience and sound judgment is unable to stand up and speak his thoughts in public. It is to help such men to overcome this defect, and to encourage all to learn to speak, that this article is written.

Note first that public speaking is at root the same as ordinary talking. If you can speak to *one* man in a way he understands, why not to *two* or *three* or a *hundred?*

Thomas Champness, a wonderful preacher, gave me this advice: "When you are talking, be careful to use good English; then, when you speak in public, you will simply speak a little louder." That's the first idea: speak to a crowd as you would speak to an individual. When a preacher fires off a sermon in mid-air, we just sit and wait till he runs down; but when he talks to us we listen.

Remember next that the simplest words are best. They are all good Anglo-Saxon, our native speech. The long words are borrowed from Latin and Greek. You seldom need them; they have their uses, but men love best to hear the words they understand. Polysyllabic eloquence connotes incomprehensibility. You see what I mean, don't you? Never try to use long words where short ones fill the bill. The words we used in childhood reach our hearts and minds the soonest.

There are some simple rules for public speaking that are worth noting:

1. Speak very slowly at first. When you have "got the pitch of the hall" and found out just how loud you need to speak, you can speed up if you wish.

2. Stand naturally. If your hands bother you, hold the lapels of your coat or cross your arms behind your back.

3. Hold your head high. If you talk down at the front benches, your voice won't reach across the hall. Speak to the man at the back, and all the rest will hear.

4. When you have said what you have to say, sit down. Other people's time is valuable.

These rules should be observed from the very first attempts to speak in public. I have heard men speak their words in bunches, have seen them tie themselves in knots, and I knew a preacher of great wisdom who went through all the motions of swimming, breast stroke and side stroke, while he spoke. This man's arms wouldn't stay folded. If you can use your hands to help your oratory, that is good, but don't make useless gestures.

There are many places where you can learn to speak. The church meetings and the lodges, debating societies and social gatherings, give every man his chance.

A farmer who is prominent in his district will be asked to speak at farmers' meetings. Note here the importance of Rule 4. Perhaps the meeting is called to discuss the value of a new fodder crop. Two or three farmers who haven't tried it and don't know anything about it will get up and relate all their past experience with the old crops, or talk about something entirely away from the subject. *Be as careful with other men's time as with your own money.* Here are, say, sixty farmers, whose time at 50c an hour is worth in all $30 an hour, or 50c a minute. Ten minutes wasted is $5 thrown away. What have you to say that is of value? What can you tell them that they don't know and ought to know? Get right at it. Say it so that everyone can understand. Hammer the truth home with figures showing what it means to them in money saved or wasted. "The words of the wise are as nails." Clinch them and leave them.

If you are called on to speak at a banquet, ask yourself: (1) What can I say that will interest? (2) What can I say that will be worth remembering?

One man I heard speak to the toast "Canada" read a long paper full of facts and figures, areas, distances, mineral and forestry statistics, a combined geography and encyclopædia. Nobody was interested; nobody could remember these things; nobody wanted to hear them.

Other men, speaking to a toast, will tell a string of jokes and stories. This at least is interesting. A good story well told is worth repeating. But a good subject deserves better treatment. Wit should be just the sauce to some solid sober thought. It is the yeast that lightens the bread of speech, but we don't feed folks on yeast-cakes.

"Canada," for instance, should call for patriotism; a note of thankfulness, faith, hope and courage; and perhaps a warning lest in digging for the dollars we lose the crown of our high destiny among the nations.

"The Ladies" merit more than jokes and empty compliments. Try to pay a worthy tribute to the mothers and pioneer women of our race.

Just a word here about faults of grammar. Not every farmer can speak good English. We hear men say, "We done it good," when they mean "We did it well." These things may not be of supreme importance, but you do not want to appear ignorant on the public platform. As you can't very well go to college with your boys, ask some competent friend or acquaintance to notice what errors you make and "put you wise." Often it is some habitual mistake that you can easily correct. As this mistake may be repeated many times in a short speech, it is well worth while. Remember that the higher you rise in public life, the more will your mistakes be noticed and criticized.

Lastly, we come to the political platform.

The farmer is the right man to represent the farmer. By contrast with the city speaker, the farmer-candidate is at a disadvantage. He lacks "smoothness." His speech is plain and blunt.

It will do you good to learn something of the gentle art of stroking an audience the right way.

Set out to please your hearers. Perhaps you can praise the town, the district, the audience, the fine hall in which you are speaking, the chairman, the previous speakers. It is surely a pleasure to see so many ladies present. When the ladies take an interest in politics, there is hope for the nation.

Then, when you have secured a sympathetic hearing and got over your first fit of nerves, settle down to your main line of argument and make it as clear as you can.

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Good Cattle Pay Dividends

An Ayrshire Romance Where a Big Canadian Farm Has Proven the Value of Purebreds to the Pocketbook and to Character

A well-known prize-winning cow at Burnside with the record of 11,757 pounds of milk and 528 pounds of butter fat within a year.

By LAURA ROSE STEPHEN

This story is an argument for pure-breds in dairying. The author is the editor of that well-known book on Dairying by Laura Rose. Since her marriage to Mr. W. F. Stephen, of Quebec, who is secretary of the Ayrshire Breeders' Association, she has not slackened in her interest in the problems of the dairy and the betterment of the farm homes Her story of how one farmer rose from a humble beginning to his well-known prominence of to-day will be interesting to all young men. The cattle business is helping many a man into wealth and usefulness in the community.

RECENTLY I was asked the question, does it pay to keep purebred cattle? Not always, and yet in nearly every case it does. Far too often is the value of a thing estimated only in the dollars and cents column, and sometimes the cold inky-black figures cry out "Failure," so far as a large dividend is concerned. But let us take account of the other columns that do not appear in the ledger.

Recently I was out to Springburn Farm. Fine new up-to-date barns have been recently erected with two immense silos; a splendid system of ventilation; a constant water supply in each stall; all the windows double sash, everything to ensure the comfort of the cattle and to facilitate the work. Why this outlay of money? Why everything so complete? Because the owners, Messrs. McMillan and Leggat, two young Scotchmen, have a choice herd of pure-bred Ayrshires and buildings and equipment must be in keeping with the fine quality of the cows.

One could not imagine this herd in tumble-down shacks of barns.

Fine barns mean that the house and surroundings must keep pace and so the young wife told me the kitchen was to be remodeled and other improvements made. All this is largely the result of keeping pure-bred stock.

The champion Ayrshire cow at Ayr, Scotland, 1914. This cow is 17 years old.

THE REFLEX INFLUENCE ON PEOPLE.

There is a reflex influence on the people who own and work among such animals. There is a wonderful satisfaction to be had in owning something that really has quality. Moreover the pride and pleasure experienced when showing such stock is a keener enjoyment than mere dollars and cents are capable of bringing. Good stock develops the best

Three Ayrshire experts.

qualities in a man. He cannot help but have higher ideals of other things through his ownership and interest in pure-bred animals. He must learn to be gentle and kind, for it would hardly pay to abuse a cow worth hundreds of dollars. He must study the needs of such valuable animals so as to bring them to their greatest perfection and be able to intelligently care for them in sickness and in health.

High-priced cows make a man think, and that is good for the man. Too many of our farmers have stock that cause them not the slightest worry—little matter if one die. "'Tis only an old cow anyway, what's the odds!" It sounds rather funny to say that it keeps a farmer going to rank in the same show ring with his cattle, but isn't it something worth while, to have cows that act

The kind of cows Mr. Ness uses for foundation stock. The pretty upright horns give a marked distinction to the breed.

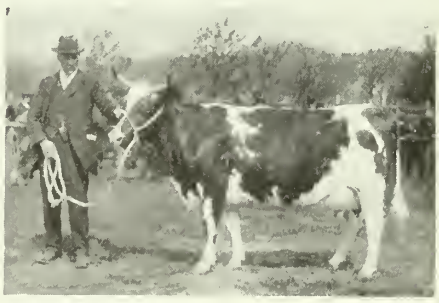
as a spur to self-improvement and the bettering of one's surroundings!

AN AYRSHIRE LOVER.

Of all the breeds, the Ayrshire is more calculated to do this than any other. This breed is acknowledged by all to be the most alert, the most stylish, the classiest of all dairy breeds. There is no more inspiring sight at a cattle exhibition than to see a string of fine Ayrshires. Unconsciously you straighten your shoulders, hold your head higher and feel that blood counts after all.

The Ayrshire is medium in size, white and red in color; head small and bony with large full bright eyes, dished face, broad muzzle and large mouth. The pretty upright horns give a marked distinction to the breed; a long slim neck with clean cut throat, sloping shoulders, good lung and heart capacity; body deep and large, udder large and square and strongly held up. Certain families incline to have short teats but careful breeding is eliminating this defect.

The Ayrshire is a healthy, hearty cow, always eager for her feed, not overly particular what it is, and readily turns it into milk.. She gives a good quality and quantity of milk which is well-suited to all purposes. Having very small fat



The female championship cow in the milk classes at the Kilmarnock show, 1914. The Ayrshire in her Scotch home.

Sir Hugh, owned by Jas. Howie, of Hillhouse, Scotland. Champion at Ayr. Note the predominance of white.

globules it does not cream readily and this makes it ideal for cheese-making. For infants and invalids it takes first place, while its well-balanced proportions of butter fat and other solids meet the requirements of the high-class market milk.

Where did this breed originate? Tell that and many of its excellent qualities are accounted for. In the County of Ayr, Scotland, a district of succulent grasses but rigorous coast climate, hence the strong constitution, the ability to hunt for food, the honest endeavor and success to make good returns for what is given. Study the breeds of cows and you will be surprised to see how much is reflected in them the characteristics of the people of their native lands. The dainty Jersey has the traits of the French; the stolid, solid Holstein is decidedly Dutch, the Shorthorn a veritable John Bull.

Twenty miles from my home is the best dairy farm in Ontario and Quebec, and when we say that might we not include the other provinces and say the best dairy farm in the Dominion. We are proud to have such a worthy distinction so near us and feel we share in the success of its owner, R. R. Ness. Several times I have driven to see this farm with friends.

Energetic as Mr. Ness is, if he had not been fortunate in getting a splendid helpmate, he never would have come to the front as he has. (Let me put in parenthesis just here, young men, you be wise in your choice of a life partner if you want to climb to the top of your profession: the wife will do more in helping you up the rungs of the ladder of success than most men are willing to acknowledge). Mr. and Mrs. Ness married young, she but nineteen and he twenty-one. They had plenty of steep hills to climb and many a boulder nearly knocked them over. They bought a $6,000-farm on a capital of $600. The first year of married life is always the worst, so 'tis said, anyway, Mr. Ness lost both his horses and his best cow that year. A few years later a disease broke out among his cattle and twelve out of eighteen cows had to be disposed of. But this didn't daunt plucky Bob, or sicken his wife of the farm. These reverses seemed but to make them more determined to succeed. Mr. Ness made no wild speculations. Gradually he increased his herd of Ayrshires, enlarged his buildings; went to Scotland and made direct importations from the best he could find among the best well-known stock there. He increased his acreage and at the present writing has 300 acres of splendid land, every acre under cultivation. He has one of the largest, finest herds of Ayrshires on this continent numbering, he told me the other day, 210 head, prize-winners, wherever they are shown. His immense barns are painted white; electric lighted and otherwise well equipped. The beautiful modern home contains his best asset, four wide-awake boys with the love of good stock bred and intensely cultivated in them.

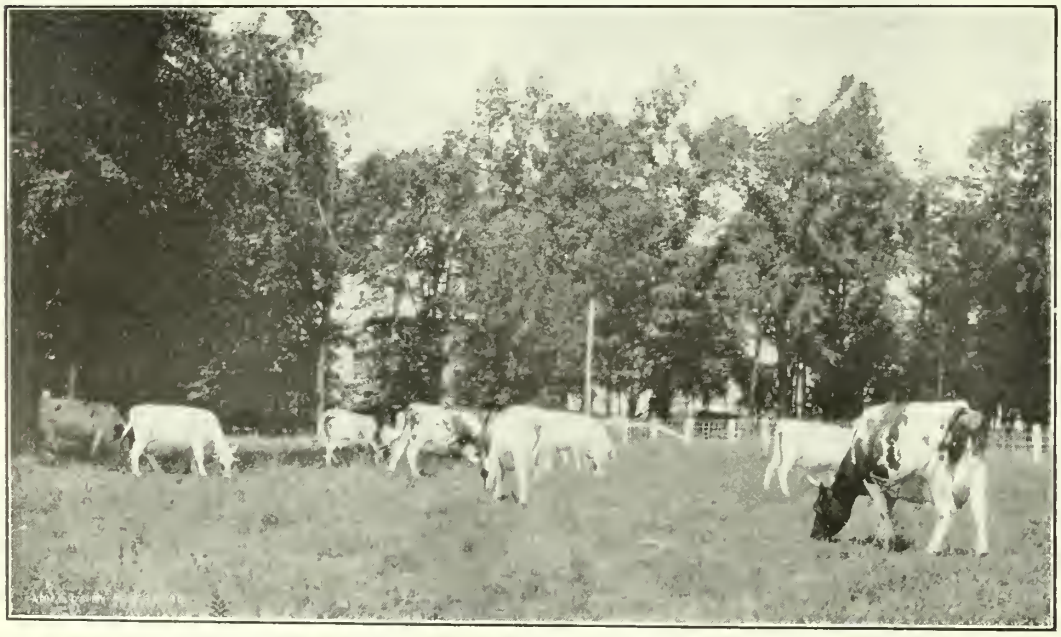
It is worth a journey to the farm to see little Douglas in the calf-pen giving the pedigree of each baby Ayrshire and setting on them a value that would dumbfound the breeder of scrub stock. From many viewpoints it pays to have pure-breds.

It would have been impossible for Mr. Ness to have attained his present financial standing and his enviable reputation as a stock man with anything other than the best of pure-bred stock.

It is a mistaken notion that much capital is necessary to success in business.

If a man has a good head and a pair of willing hands and feet he will soon be in a way to procure his capital.

Mr. Ness is an outstanding example of such success and we speak of him only to stimulate our young men farmers to higher ideals. Again we say it pays to keep carefully selected pure-bred stock.



A corner in the cosy farm at Burnside, Howick, Quebec.

Mr. R. R. Ness, of Howick.

New Brunswick's Farm Women

The Beginning and Progress of the Woman's Institutes in a Maritime Province that is Moving

By WINNIFRED MARCHAND

IN JUNE, 1911, two lady speakers were sent out to organize for the first time in the history of New Brunswick, what is known as "Women's Institutes." An organization which has for its object the introduction of higher ideals and nobler sentiments is bound to live, and as a result of New Brunswick's first trial, sixteen organizations were formed. During the following months some of these affiliated (being near together), while others through lack of a leader or for other reasons failed to exist, but those living proved to be a power for good to the individual and the community.

Again in August, 1912, it was deemed advisable to send two more delegates to visit the Institutes already organized and to assist in organizing in other localities where the women of these districts might desire. The field work of these ladies increased the Institutes in number to twenty-five. These, with the exception of two, have lived, and the field work accomplished last fall has shown that the Women's Institute is an organization which has come to stay. It exercises a beneficial influence upon the individual and the community, especially in rural districts, and although this work is yet in its infancy as compared with Ontario, the work in New Brunswick is rapidly coming to the front and has a very important part to play in the lives of New Brunswick homemakers.

Not until within the last year has it been possible to obtain much money from the Government for Institute work. Being a new society, the Government was somewhat afraid it might not succeed, but after being shown what ambitious and intelligent women the Province of New Brunswick has, the Government readily set aside a substantial sum and the Department of Agriculture was then in a better position to aid the women in this noble work. A grant of five dollars was given to each branch having a paid-up membership of at least fifteen, and all branches were provided with minute books, report blanks, hand books and literature sent out from the Department.

Last February a convention was held in Fredericton, which resulted in a large gathering of women from every part of the province. The convention was a success in every sense of the word, and the women were eager to return to their respective localities and tell their fellow-workers how the local Institute could be made a greater influence for good. Preparations are now being made

If the province of New Brunswick has any doubts about the benefits to be derived from a flourishing Women's Institute organization, it has only to look to Ontario, where the movement has become so popular under the direction of Mr. Putman. The inspiration and upward impulse that is given to the whole farm improvement plan by the women on the farm shows that after all the best aid that can be given to agriculture must come through the home.

for the second annual convention, to be again held at the capital in June. The members having increased so in numbers, a much larger attendance is expected this year.

The months of September, October and November of 1913 were devoted to field work. It is a recognized fact that more good can be done by visiting the different Institutes than in any other way, and it has become a custom for lady lecturers to be sent out once a year to visit the many localities where Institutes are in existence. Four ladies, including an organizer, lecturer, demonstrator in household science and demonstrator in home nursing were sent out, at the time above mentioned, visiting in all fifty-one places and effecting organizations at eighteen new places. There are at the present time, forty-one branches of Women's Institutes in New Brunswick, with a membership of about one thousand.

Last September, at the Fredericton Exhibition, four rooms, comprising model kitchen, dining-room, bed-room and ladies' rest room, were provided for the Women's Institutes. Demonstrations were given each day along nursing and cooking lines, by which members as well as visitors were much benefited. It is the intention of the Department to have a ladies' rest room at the St. John exhibition, this fall.

Bulletins have been printed and distributed among the members on,—"Homes, Making Them Attractive," and "Valuable hints on Nursing," "Uses of Fruits in the Household," and, "Children." During the year more are to be printed along lines of special interest to all homemakers.

It was also the intention of the Department to spend part of the funds on a traveling library, but afterwards it was decided to make a present of six books to each branch and to pay half the price on all books bought by the different branches, thus encouraging them to start a library of their own.

The Department of Agriculture is giving and is prepared to give special attention to the developing and the extending of Women's Institute work. The work has grown steadily since its organization. The subjects taken up at the meetings are such as bear directly upon the everyday activities of the woman and cannot but be of great assistance to those who take advantage of these meetings.

The following is a programme mapped out by the Clifton branch of the New Brunswick Women's Institute. It will give one an idea of the range of subjects dealt with:—

SEPTEMBER.
Lecture on Interior Decoration of Homes.

OCTOBER.
Suggestions for Knitting; best wool to use.
How to Can Fruit and Vegetables.
Recipes for Pickles, Jams and Jelly.

NOVEMBER
Ladies from Headquarters.

DECEMBER.
Suggestions from All for Xmas Gifts, Decorations, Cooking and Candy.

JANUARY.
Talk on Parliamentary Law and Usage. The Correct Way to conduct a Business Meeting.

FEBRUARY.
Open Meeting and Entertainment. Silver Collection for Benefit of Organ Fund.

MARCH.
Rug and Carpet-Making

APRIL.
Suggestions from All for Systematizing Housework.
Discussion of Labor-Saving Appliances.

MAY.
Paper on "The Fly Peril."
The Kitchen Garden. Discussion by Members. Preparing of Dainty Side-Dishes and Salads.

JUNE.
Paper on Noted Women of New Brunswick and What They are Doing.

JULY
Talk on Social Settlement Work in New York.
Election of Officers.

AUGUST.
Annual Meeting.
Tea, Concert and Sale of Work for Organ Fund.

One may ask the question, "In what way have the communities been benefited by the Women's Institute in New Brunswick?" Ans.—Circulating libraries; building and repairing public halls as well as furnishing them; suppressing sale of cigarettes and tobacco to minors; improving parks and schools; planting of trees; giving prizes to schools for nicely kept gardens; presenting the schools with flags, drinking cups, etc., providing fountains, lights, side-walks and erecting a band-stand.

"The Institute is for women what the public school is to the nation. All denominations and classes meet together and they are one. Class, social position, wealth, religion, are all swept aside, and each one must find her own level and each one must be taken on her own merits. The Institute is not for the amusement of a select few; it is a strong, live, active organization, and every woman and girl, whether in village, town or city, should be brought under its beneficial influence."

Number 723:

By MADGE MACBETH
Illustrated by GEO. H. FLATER

A Strong Story that Throws New Light on the Immigration Problem

A TIRED little street dragged its aimless way through the village, stopping only when it reached the Solenski cottage. This structure consisting of but one storey and one room, in common with the hundred others like it, turned shyly away from the road as though to discourage the prying eyes of any curious neighbors who might pass. Visitors were few, very few; the priest and the tax collector. One came seldom, realizing that his visits were apt to be fruitless as far as material reimbursement was concerned, and the other came frequently, hoping to circumvent the visits of the first and render unto Caesar the things which were Caesar's, so to speak.

And except that she was unable to provide each with that which he sought for her spiritual aggrandizement and material indebtedness; except that Dimitri had had little or no schooling and toiled so hard; except that pretty little Anna would have no dowry and that stoop-shouldered, book-loving Feodor could not be supplied with books—aye, and except that the cabbage pot seldom saw the piece of meat which gives to the national dish such appetizing flavor, and that the tea, perforce, must be very weak, Katrine Solenski was happy. The law of compensation provides a strain of indomitable happiness in the nature of the Russian-Polish peasant, when there is absolutely nothing under the sun to make them happy.

Pretty little Anna and her mother bustled about getting supper. They always bustled over any task, no matter how simple. It seemed to lend more importance to their work. They moved constantly between the stove, the table and the window; Anna peering into the early dusk for a sign of Dimitri, Katrine giving another turn to the soup, changing the position of the loaf of coarse, black bread, or passing her hand over Feodor's dark head, where it rested in the hollow of his arm. The boy was looking far beyond the confines of the little hut and dreaming his youthful visions. Many people called him 'queer.' It is a very common definition of genius.

"Saints! But the wicked boy does try my patience!" scolded the mother, totally unconscious that she told an enormous lie, for which she would never know enough to ask absolution. Dimitri try her patience? Why, the bare idea was preposterous!

"Perhaps the master has kept him," defended gentle Anna, also unaware that championing her elder brother was wholly unnecessary. "See, mother, the snow is falling—it is not really dark. Indeed, I am sure it is quite early."

The three shaggy dogs which shared the room with their masters, rose suddenly and cocked their ears.

"He is coming," said Feodor, dreamily. "I can hear him run."

Dimitri passed the two small windows which overlooked the road and without waiting to kick the snow from his boots, entered by the door which opened at the side of the cottage.

Although trembling with eagerness to take his family into his confidence, he remembered the Ikon, cheap and gaudy—but benevolent, nevertheless—and murmured a hastily perfunctory prayer. Then, "You can't guess!" he cried, radiantly. "You can't guess who has sent me a letter!"

"A letter!" they all echoed, and the dogs barked sharply.

"Aye—a letter," and he waved a soiled sheet beneath their very noses. "Andre Herlebuc! He writes me this all the way from Canada, telling me to come out there without delay. Why, mother," dropping his voice to a whisper of awe, "Andre says that I cannot earn less than 'two dollars a day.' Tell us, Professor Feodor, what magnificent sum that equals in the good Czar's money!"

They stared at one another open-mouthed, never having thought to sit down. It was too stupendous a thing to be grasped quickly; great joy and great sorrow leave the mind in the same stupid state of bewilderment, and Katrine was not accustomed to large events.

"But that is not all." The boy's voice shook with excitement.

"No?" queried the mother, doubtfully.

"He has sent me money for my passage, so that I can leave at once! Oh, mother—Anna—Feodor—think how our father would have been proud! Think what I can now do for you all!"

His eye traveled quickly over the bare room.

"We can have chairs instead of benches!" He looked with royal scorn at the stationary settles he had helped his father fashion many years before. "And, of course, we will have beds like the nobility—no more sleeping on the range for thee and Anna, mother!* And we can lay by a splendid dowry for our little sister, here, that she may have fine white linen—and—and—our Professor shall go away to school with gentlemen's sons. Saints and martyrs! How mother will dress and what meats we will have!"

"And thou—my Dimitri, what wilt thou have?" asked the mother, smiling crookedly through her tears.

The boy threw back his head and laughed.

"Oh, there is time to think about me! I think I will have a gold watch, and a fine horse, and—and—maybe a wife who will bring children to sit on thy knee!" For an instant his exultation gave way to something deeper, holier, and he bent over to kiss his mother's brow. "But what of supper?" he asked, at once, a little ashamed of his emotion. "Bless us; how you keep a man waiting!"

*Very poor Russian peasants sleep on the range—as many as can crowd upon it. The mother and younger children are given this luxurious berth by the older children. The warmth of the stove, after the fire has died, is very acceptable in the cold portions of the country.

The two women darted about setting the humble meal before him. All was bustle and confusion—with the exception of Feodor, whose dreamy calm was like a patch of heaven's blue in a storm-tossed sky.

"What's this?" demanded Dimitri in a tone which made his sister jump. "This the tea for a family like the Solenskis? Throw it out little sister, and make some more! To-morrow I will buy a pound!"

Ah, what a meal! What noisy drinking of cabbage soup and greedy drinking of strong tea! What tears splashed into the tin cups, to be turned into choking laughter as the black bread got down the wrong throat! Andre's letter was passed from hand to hand, was held this way and that, better to catch the light from a feeble lamp smoking on a shelf in the corner of the room. Finally, it was spread out on the table and pored over by four eager pairs of eyes, with sometimes an interruption from one of the dogs, as he lept up and pawed his master's back. Surely, the wonderful lamp held no whit less magic to Aladdin than did this greasy paper from a foreign land.

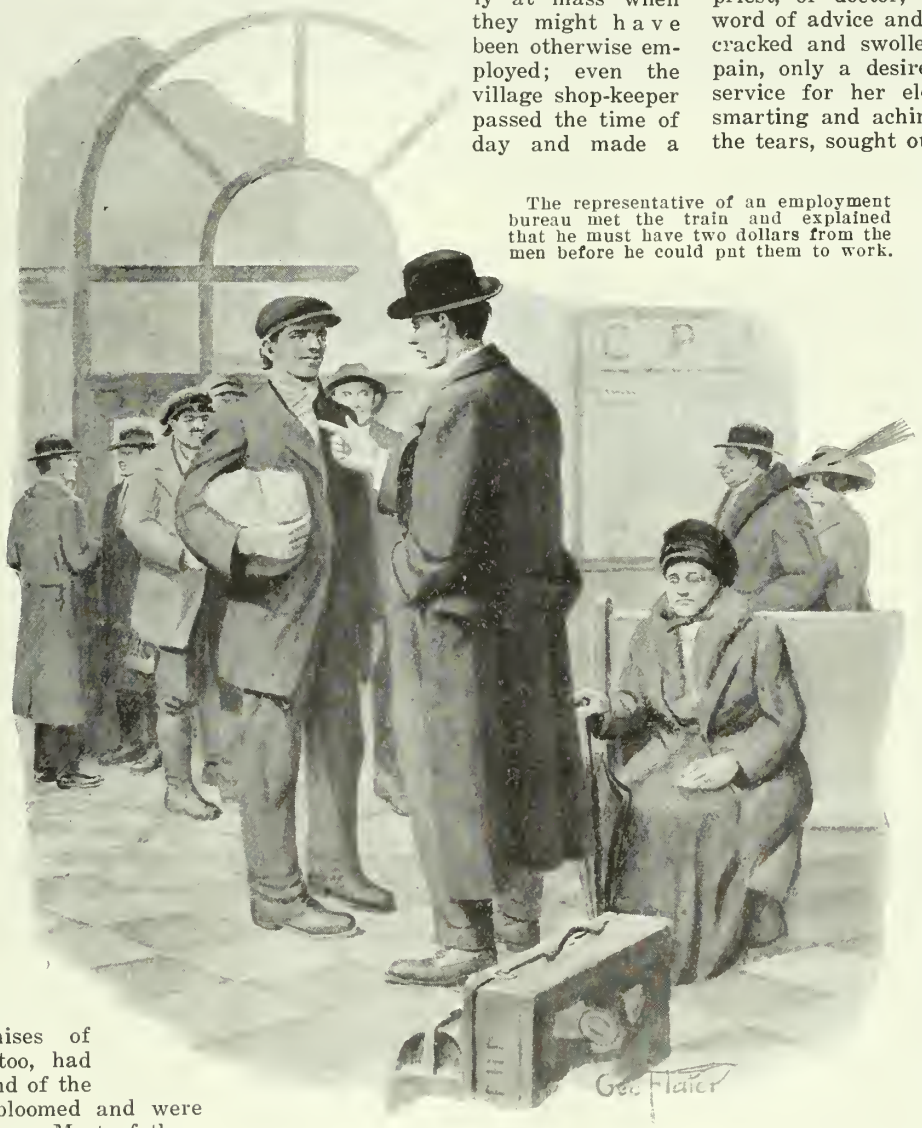
Already Dimitri felt himself a king; he boasted and swaggered and promised such riches as would make the nobility jealous. The past, the present was forgotten and he sailed away on the wings of the future until they were all dazzled by his buoyant enthusiasm and confidence. Katrine's heart was like to break as she listened to him; with a sigh she looked into a past from which the roses had faded twenty years or more, leaving only the faintest odor upon which to fasten memory. She saw herself a bride, blushing under the hot whispered promises of Ivan Solenski; she, too, had sailed away to the Land of the Future where roses bloomed and were to be had for the taking. Most of them had died before she reach the spot, but perhaps their hearts were yet alive and they would bloom again for Dimitri. In a New World.

With strength which many a man might envy, she strangled her agony at the thought of losing him and hid it from view. She must give her boy cheerfully to that land in which gold was plentiful, in which he could have a fine horse, a gold watch, and a wife who would bring him many children. He should not be discouraged by the ache which was nearly suffocating her, or by the flowing tears of gentle Anna.

"Peace!" she cried sharply — very sharply for her. "What a noisy lot! Should the reverend father happen upon us to-night, he would think that the devil had bewitched us all! Hast thou consulted him, Dimitri, or said aught to the doctor or the master?"

"How could I? I came running home as fast as my legs would carry me to tell you the great news, first. To-morrow will do for the others."

The news quickly spread. Dimitri was a personage in the village. He was approached from several quarters in the matter of securing like good fortune for others of the townsfolk. Mothers with grown daughters noticed him particularly at mass when they might have been otherwise employed; even the village shop-keeper passed the time of day and made a laborious joke with him. But a few old crones shook their heads and mumbled. It was a long way across the ocean and boats had been lost. There was the case of Wasil Wonsock, who started out to join his son in America—yes, yes, they all remembered Wasil, who was never found by his son, and who never returned to Poland. And Anna Herminac —no one had forgotten Anna, who set out with the babies to join her husband in the land of New York. Did she join him? No—no—no! God, indeed was cruel! But how could anyone find a wife with babies in the great land of New York?



The representative of an employment bureau met the train and explained that he must have two dollars from the men before he could put them to work.

Surely, Dimitri was a fool and Katrine was ten thousand fools to let him go. That Andre Herlebuc was always a fine lad to boast. No good would come of it, they would see. Still, if he would be so headstrong, if Katrine would be ten thousand fools, why, then, let him take these knitted wristlets. And see, here was a silk handkerchief fit for holiday wear. And behold, if here was not a muffler made years ago—when eyes were brighter and hands steadier, for—for—well, never mind, for whom! Alas, he would never need it now, at any rate, and God bless the fine young man!

Twice a day or more, Katrine could be seen in her bright red skirt, racing to priest, or doctor, or the master for a word of advice and comfort. Her hands, cracked and swollen with cold, felt no pain, only a desire to perform further service for her eldest born. Her eyes smarting and aching from holding back the tears, sought out holes to be mended and buttonless places. Her brain working under high pressure and at unexpected tasks, seemed to lie in her head like a stone, and her heart—ah, me, the less said of it, the better!

Between the priest, the doctor and the villagers, Andre's letter was soon worn to shreds, and it was stoop-shouldered Feodor who saved the situation by making a laborious copy of its instructions. Dimitri knew it almost by heart, but kept it in his bosom because it represented something of his brother's devotion.

The day of parting came. Only when he realized that he was turning his back upon country, friends and loved ones, did Dimitri's joy in going ebb, leaving a swollen throat, a throbbing heart, twisting lips and blinded eyes. He never could remember how things happened at the last; there was a confused mass of townsfolk waiting to wish him godspeed, the drone of the father's voice as he blessed him, jests and advice from his friends, a timid caress from Anna, and a whispered word from Feodor—"I wish you were not going brother!" There was a raucous grinding of wheels and a sudden straining in somebody's arms. He was

Continued on Page 81.

A farmstead in central Alberta that looks like an Eastern farm. This house is in the centre of its thousand acres, and is fitted with all modern conveniences. In front of the house there is a field of timothy three-quarters of a mile long and half a mile wide. Many Ontario farms now offered for sale, with equally as good buildings as these, can be bought for less than the price of the improvements, so this writer contends.

Ontario's Farms For $60.00

Young Men's Chances Are Better Than Ever Before, for Good Prices for Produce Will Continue

By J. KERR ABBOTT

This writer, who is already well-known to our readers is one of the most careful observers as well as one of the most entertaining of writers that the province has produced. A journalist by profession and a farmer by choice, he combines the two in a way that keeps him in touch with rural conditions and gives him the seer's eye for the future. Many may differ with his conclusions, but to the average man they look quite sound. These Ontario farms which are selling at the prices he names will soon be much in demand by those who realize the splendid opportunities for mixed farming that remain to the people of this province.

THE outlook for a young man, starting on a farm in Ontario, is brighter to-day than it has been in the history of the province. It is easier to make a start now than ever before. The possible earnings on a farm are greater in this year of 1914 than in any of the years that have passed.

This statement is made in full knowledge of the difficulties in securing labor and of the high cost of labor. It is made despite all that can be said, and with truth, of the artificial handicap that is placed on agriculture by tariff legislation and legislation in general that unduly favors what we call the Special Interests.

The statement is based on the outstanding fact that land is cheaper in Ontario at the present time, outside of a few special sections, than at any other period, and that the produce which may be obtained from that land can be sold at more remunerative prices than were obtained at any other time. True the pioneers secured their first holdings for a mere song. But what was the cost in labor of making those holdings available for cultivation? And what can these holdings be bought for to-day with fields fenced, buildings erected — all fully equipped for the purpose of producing an income? They can be secured, outside of special locations, for less than the improvements upon them cost to create. The land is thrown in as a bonus.

It was not always thus. As a boy I accompanied an older brother in his search for a new home. At that time, it was before the great immigrations from old Ontario to the Western States had fairly begun. It was before our own West was known. There was then no rush to the cities. For every three farms on the market there were four or five purchasers. A reasonably good farm then could not be had for less than a hundred dollars an acre. To-day conditions in this respect are vastly different. The rush to the Western provinces and to the cities of Ontario has depleted the population of most of the townships in older Ontario by 25 per cent. or more. Where there are now five farm properties for sale, there are not more than two or three possible purchasers. The result is that farms, which thirty or forty years ago, commanded $100 to $125 an acre, can now be had, with greater improvements now than then, at $60 to $80.

EGGS SIX CENTS A DOZEN.

And what of prices for the produce of Ontario farms? As a lad I carried eggs to a nearby village and sold them at six and seven cents per dozen, in trade. This spring in the Township of Clarke dealers are paying twenty cents at the farmer's door. I have seen, not so very long ago, good cows sold at $25. Cows no better are selling to-day at $80. Butchers are paying on the farms as much for calves six weeks old as was paid in the market place for good yearlings a few years back. Hogs on the hoof fetch nearly twice as much as was procurable for dressed hogs at the time when farms on which the hogs were produced sold at 25 per cent. higher prices than these farms do to-day. In Toronto potatoes sold retail at 25 cents per bag in the nineties. One bag will bring as much as five bags did then. The dairy herd can be made to yield nearly double the returns in money now that it could be made to yield in the last decade of the past century. The same statement holds broadly of fruit,

poultry, etc., and the difference in the price of horses between now and then is even more marked. Even sheep are more profitable than they were in the old wool days.

True, we hear of the fabulous prices once realized for the wheat and barley produced on virgin soil. We forget that these very high prices were only occasional events. I have seen wheat sold at $2 per bushel from farms in the Township of Innisfail. I have also known it to be teamed for ten miles and sold for around 80 cents; and this from harvests that had been cut with a cradle and bound by hand. Moreover part of the price that was obtained for grain in the early days represented not only the labor of producing it, but the sale of fertility stored up in the soil during the centuries the land was under forest. With the mixed husbandry now practised on well-managed farms the fertility removed from the soil by constant grain croppage is being restored.

BIG CHANCES NOW.

We know that in the old days of low prices, low average prices for the products of the farm, many amassed a competence. If that was possible then what should be possible in these days of very high average prices? True the standard of living was lower then. People lived in a simpler way. Farm wagons conveyed the family to church or market. There were no carpets on parlor floors. The furniture was of Puritan simplicity. Even an organ was rarely seen in a farm home. We would not go back to the old manner of living. We should not even if we could. But the higher prices obtained for farm produce in this day justify the higher level of comfort prevailing and still make it possible to acquire an even larger competence than was possible in the old days of simple living.

Nor is the era of high prices for food products likely to be temporary. Rather the reverse. The glamor and life of the cities has caught a large proportion of our people. This influence will continue. Less than half the population of Ontario is living on the land. A large and permanent home market is thus assured for food products. Across the line the movement cityward is more marked. Not over ten per cent. of the population of the great state lying at our doors, New York, is on the land. In some nearby states the proportion of urban dwellers is still greater. Despite all the possible or probable changes in tariff legislation, either in the United States or here, these states must draw largely on Ontario for their food supplies. Economic necessity will compel this. That ensures a large, continuous and profitable export outlet for the surplus products of Ontario farms.

HIGH PRICES WILL CONTINUE.

Surveying the whole field, cheap land, high present prices for the produce of the land, a certainty of the continuance of high prices, can there be any doubt that the present affords the best opportunity ever offered for the young man starting on an Ontario farm?

But that condition will not continue. The facts are becoming known. The rush to the isolation, to the hardships, to the deprivation of fruit and vegetables, to the distance from the advantages of an advanced civilization, which are and will be inseparable from existence in the West, will not continue, at least to the same extent. Wiser people are beginning even now to more accurately measure the independence, the solid comfort, the assured well-being of the farm against the crowding, the squalor and the constant horror of sinking below the bread line of the great city. There is even now a turning of eyes to the concession lines of Old Ontario with their friutful orchards and well-filled barns behind the rows of roadside maples. The disproportion between buyers and sellers of land is bound to disappear. Land will never again be as cheap in Old Ontario as it is to-day. The young man with energy, with skill, with determination, and with a small capital, starting on an Ontario farm now, is assured of a good living, of the hope of a competence and of leaving to his heirs a property with a much higher selling value than that now ruling.

OVERCOMING THE ISOLATION.

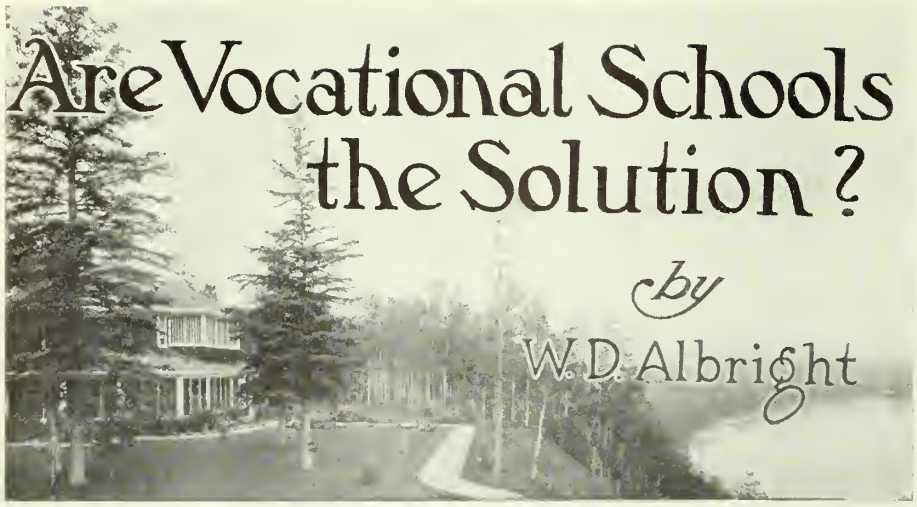
There is, however, another side of the picture and one that must not be overlooked even here. President Creelman, of the O.A.C., once said that "the curse of the city is in its crowding and the curse of the country is in its isolation." There is too little of social life in the country; too little of meeting together for mutual improvement and mutual pleasure. One means of improvement can be found in Older Ontario at least, in church consolidation and in school consolidation. In the village of 500 people near which this is written there are three churches. One church would better serve the purpose. That would ensure a larger congregation, more life in the service and the combined congregation would more effectively provide for young people's literary societies, tennis clubs and other means of improvement and intercourse. Why should there not in the basement or school room of such a united church, be a billiard table even? Billiards is a game of skill. There is nothing inherently wrong in the game. Young people will play it. Is it not better that such a game be played under the eyes of the pastor and elders of a church than in the village tavern, even if that tavern is run on prohibition principles? A church with a strong literary, social and amusement organization, with debates, music, reading circles and billiards for winter, and tennis, baseball and football for summer would have an irresistible hold on the young people. It would be a real social centre for the whole neighborhood, cross-roads village and country combined.

So, too, with school consolidation. Within some six miles of where I write this are as many schools—one in the village and the rest scattered over the concession lines immediately adjacent. Outside of the village school the average attendance is about fifteen. A small school is of necessity an inferior school. The classes are not large enough to create a real spirit of emulation. The teacher lacks the spur of rivalry. She becomes through lack of association, narrow. Backward pupils hold back others who are brighter. Backward pupils, because they are but few, do not receive the attention they should. With consolidation all this would be changed. The backward pupils in all the schools could be grouped together and given especial attention. At least one teacher in the consolidated school would be found particularly well qualified for that work. With the larger number of pupils thus gathered together the spirit of emulation would be aroused. The capacity for play, a most important element in child life, would be developed. The teaching of domestic science and elementary classes in agriculture could be provided for. Oddities and rough corners in the children would be rubbed off by association with larger numbers. A large central school would be better arranged in the matter of heating, lighting, sanitary conveniences and ventilation than is possible in a small building. Provision could be made for hot lunches at noon. Continuation classes could be arranged for which would bring to the whole community all the advantages of a high school training. In every way the children would be better prepared for the business of life and the duties of citizenship.

Incidentally, as a result of church and school consolidation the acquaintance of the farmer of the future would be extended over a wider area and that would prepare the way for the entry of more farmers into the Legislature and Parliament. Lack of a broad acquaintance with their fellows is the chief obstacle in the way of farmers obtaining more control in matters of legislation at present. And more control in matters of legislation would be a good thing for agriculture and a good thing for every other legitimate interest in the country. But that, as some one has said, is another story.

MOTORCYCLE AS A HOISTING ENGINE

Of the many uses to which a motorcycle can be put, that of using it as a hoisting engine is probably the most novel An Australian farmer who was building a barn first hauled all his material from the railway station in a trailer pulled by his American-made motorcycle. There is nothing new about this, as motorcycles have been used as traction engines before. But when the barn was completed there still remained a 400-gal. steel water tank to be lifted to the roof. As there was no winch or suitable block-and-tackle equipment to be had, getting this tank into place looked like a difficult problem. Then the motorcycle was brought into use. Two poles with a crossbar at the top, a pulley and a strong rope were obtained, and erected, and with the power furnished by the motorcycle the tank was easily lifted to its place on the roof.



Are Vocational Schools the Solution?

by W. D. Albright

A Scheme for a Broad and Balanced Education for Town and Country Alike

In the January issue of Farmer's Magazine there appeared an article on the rural situation by Mr. Drury, whose arguments were a subject of controversy to many of our readers in all parts of Canada. The number of consolidated schools in Manitoba and in the Maritime Provinces seem to be against his theories. The writer who is living in the Peace River country, and who recently left farm journalism in Ontario, has analysed the whole situation in this paper which he intended to present by their request to the Commission of Technical Education, but whom he was unable to meet at the time.

ACCORDING to the lexicon, our word "education" is derived from the Latin participle "educatus," which, in turn, is a compound of the two words "e" (out of) and "duco" (I lead). Education, therefore, signified a leading-out or drawing-out of the faculties. In its broad, literal sense it plainly connotes development of all the faculties—physical, mental, moral, and even religious or spiritual. How far removed is this conception from the narrow idea of memory-cramming, with a few feeble attempts to develop reasoning capacity by means of geometry and other abstract branches of study! The traditional lines of education that have come down to us from the ages are almost purely bookish, abstract and literary. Of the consequences, of the dawning realization of a vital lack, and of the recent movement toward a broader, saner, better-balanced scheme of public education, it is the purpose of this paper to treat.

For obtaining a clear understanding of elemental truth there is no place like the farm. The farmer is nearer than most other men to the beginning of things. As a rule, the relation of cause and effect is more directly apparent in country than in city. Let us go first, then, to the rural districts to trace the effects of a wholly bookish education.

Twenty years ago sympathetic students of Canadian conditions were pained to observe the persistent emigration of so many of our young people to the cities of the neighboring republic. Born in the Niagara peninsula of Ontario, within easy reach of the American frontier, I had opportunity to witness in acute form the effects of this steady depopulation. It seemed to be largely the brightest, most enterprising and most desirable young people who left, so that the standard of citizenship was robbed of most of its best elements and rural social conditions left stagnant, while the pursuit of agriculture settled into a rut of hopeless grind, with no scientific interest, and no promising outlook, becoming increasingly uninviting to ambitious youth. That the conditions outlined were not peculiar to our locality, though probably aggravated by a variety of causes, was impressed upon me in various ways. Before my schooling was completed, our family removed to the famous fruit belt in Lincoln County, and here, although agriculture was even then experiencing the impetus of a developing opportunity in horticulture, most of the rising generation still looked indifferently upon husbandry as an occupation and a large majority of the cleverest sought escape through the avenue of high school, and university or commercial college. Here, as in the other community, the correspondence columns of the local weeklies were more than half-filled with items about Canadians domiciled in the United States. The conclusion was irresistible: our own country was not offering opportunities equal to those across the border. Why?

OUR YOUNG MEN LEFT.

Here was a country with illimitable resources of land, forest, mine and fisheries, lying dormant, with manufacturing making slight headway and with agriculture, its chief basic industry, waning and despised. The broad acres of the North-West offered no inducements adequate to counteract the attractions of the American cities. Subsequently I learned that the Maritime Provinces had been experiencing the same kind of disastrous drain to the New England States. Boston, I suppose, contains about the same proportion of Bluenoses as Buffalo of Ontarioans. All told, it was estimated that there were over a million Canadians living in the United States.

What was wrong? Why had we not more men capable of wrestling with engineering problems and turning our resources to account? Why was farming so unprogressive and so little esteemed? And why did our Agricultural College attract but a fraction of one per cent. of our farmers' sons? Whilst politicians and public men prated in general terms about the dignity of agriculture, none seemed to want his own son to choose it or his daughter to marry a farmer. It was a good occupation for the other man's children, but not for his own.

There are many partial explanations of our lack of progress at that period, one being the magnetic effect of the neighboring nation, which, with the advantage of a more temperate climate, got the start of us in production, and then, with ever-accelerating momentum, swung along in its Colossus pace, leaving us farther and farther behind. The withdrawal of our own most enterprising classes aggravated the situation. Those who remained did not seem to possess the inclination or capacity to utilize the particular opportunities our country afforded. What was needed? Some said more education. A few liberal-minded thinkers suggested that even farmers were the better for education. But it was noticeable that once educated, the boys seldom remained farmers and those who did so appeared but little advantaged so far as their business success was concerned. And this opened a new line of thought. Were our schools at fault? It was a bold line of inquiry, for had we not boasted of having the best school system in the world? Had we not been granted a diploma for it at Philadelphia? Still, facts are stubborn things.

OUT OF TOUCH WITH COUNTRY LIFE.

Being strongly drawn toward farming by hereditary impulse and home influence, and wishing to fit myself to farm as well as possible, I began to examine the curricula of public and high schools to discern wherein schooling would prove helpful to me as a farmer. I approached the inquiry sympathetically, desiring to make out a good case, if possible. There were reading, writing and arithmetic. Of course they were necessary and fundamental. The fact that nearly all the arithmetical problems dealt with plastering, papering, canoeing and other unfamiliar trades and sports did not seem to matter to the text-book authors. They knew nothing of such mundane things as barns and silos. The readers contained some gems of literature, which was as it should be, but only a tantalizing taste of such articles as "The Story of a Drop of Water," "Heat, Conduction and Radiation," and others dealing with familiar natural phenomena of practical importance, which, for my own part, I found very absorbing and suggestive of observation and thought. The lesson on heat, for example, led directly to an in-

telligent grasp of the important matter of ventilation. Why should there not have been more such lessons?

Geography? Well there was not very much in the geography to develop interest in farming, save an attractive picture of fruit and vegetables, inset in a cut of Niagara Falls. A list of the rivers of Europe or the capes of Asia had really little connection with everyday life in Canada, had it? But it would be well to know these places in after years, if one were traveling that way—if he had not forgotten them all in the meantime.

History? Well, come to think of it, the history did deal almost exclusively with ancient wars and licentious kings. There was not much about the history of agriculture. The records of war and conquest appeared to be all that were worth preserving. And it was pretty dry—hard to memorize without visualizing the important sentences and dates as they occurred on the printed page.

Algebra? Yes, that would be a great help in solving difficult problems met with in after life. I studied it two years, liked it and passed well in it. I have not used it once a year since and could now resolve scarcely more than a simple equation with X.

Geometry? That was to develop reasoning power. I have never been able to see why the reasoning faculties might not be very well developed by a study of economics—a knowledge of which is sadly needed—or by deductions from observed natural phenomena. Possibly geometry has the advantage of inculcating a habit of exactness, but may this not be equally well secured by extensive use of arithmetic, a working knowledge of which is invaluable to everyone?

Then there were chemistry and physics. They ought to be good. What a fine thing it would be, I thought, for a farmer to be able to test his own soil. Unfortunately, the chemistry most of us got at high school was a mere smattering of inorganic chemistry, of scarcely any direct practical use, while the physics referred more to the movement of balls down inclined planes than to the movement of water in soils. The physics, like the chemistry, was academic. There was hardly anything of applied scientific principles. It was chiefly of value as a groundwork for a future University course. As such it was intended.

But the languages! What a fine thing to know them—the modern languages in particular. How convenient to be able to converse in French or German if one were traveling in Europe. I would not be thought wholly to disparage the advantage of language study. A little elemetary Latin, in especial, is excellent for anyone. And the study of English literature and composition is worthy of all the emphasis it receives, if not more. But I submit that far too much time is devoted to acquiring unserviceable smatterings of foreign languages, to the exclusion or comparative neglect of more vital branches of education. After all, it is not a question of whether this, that or the other subject is beneficial. There is probably no subject taught in our schools that has not a certain degree of educational value but the question is what is best worth while? If some things are to be added and others emphasized more strongly, some others must be curtailed or dropped. Algebra and modern languages, it seems to me, might better be spared than most of the other subjects. For we must not neglect the fundamentals of reading, writing and arithmetic. Rather should we stress them further, aiming especially to develop accuracy and precision.

LABOR WAS DESPISED.

So much in criticism of subject and text-book. How about the method of instruction? With the exception of a little laboratory work, all the studies were learned from blackboard and books. There was nothing to do with the hands but writing and drawing. Very little that was calculated to develop executive or constructive capacity; very little chance to cultivate observation. The hand whitened while the muscle softened, disciplined only by play. The child developed along academic lines, acquiring an inclination for sedentary employment, a distaste for work, and a false basis of estimation, without a true regard for the inherent dignity of labor.

The atmosphere of the school and the personal influence of the teacher contributed to the same end. Not one of the eight teachers under whom I studied in common and high school ever encouraged me to become a farmer. The invariable implication or positive force of their advice was to pass the entrance, go through the high school, take a university course and "be something better than a farmer." Has any country-bred reader had a different experience in this regard?

The whole school system was impregnated with a silent aversion to or open disparagement of manual labor, and particularly farming. The social instinct of the race as well as the town or village environment of the high school tended to the same end, drawing the brightest boys and girls from the farm, leaving principally the less competent and less educated to prosecute the best, most wholesome and most interesting but also one of the most exacting occupations on earth. The school system was a graded stair, leading from the public to the high school, from the high school to the university and through the university to the so-called higher professions of law, medicine, pedagogy and politics, with the tailings of the system drifting off into clerical positions and even as a last resort, to the trades—anything but the farm. The sedentary occupations becoming congested under this system of force-feed, the surplus was driven by competition to seek new fields in foreign lands, notably the United States, where immigration of hordes of illiterates furnished the basic population to employ a larger grist of professional and mercantile classes than their own institutions were turning out. Meanwhile our own great natural resources lay awaiting engineering and creative enterprise, and to fill our Western plains we imported Galicians, Doukhobors, Icelanders and other foreigners. As compared with our American rivals, we were laboring under a handicap of geography and a late start. Instead of assisting to even up the odds, our educational systems increased it by biasing a large percentage of our people against the occupations our country afforded, by swelling the tide of emigration and by failing to educate efficiently the proportion who did remain.

When at last our own immigration got well under way and Western settlement commenced with a rush, speculative opportunities helped to attract men for a time to agriculture, and the influx of immigrants furnished the basic population requisite to employ at home the professional and commercial product of our educational systems, just as similar conditions did previously in the United States. But wait until the influx subsides, till the economic conditions of the West come to a level and the quota of professional men is augmented largely by the Western schools, and we shall undoubtedly see the old conditions developing again—agriculture undermanned, as it is in the East to-day and the professions and other lines of sedentary employment overcrowded. The national effects of an unbalanced educational system are not so acutely manifested at present for the reasons set forth, but the influences are still working and the problem is still unsolved.

DAWN OF A NEW LIGHT.

Realization of the radical defects of our educational systems dawned slowly at first, but here and there unshackled thinkers like Dr. Jas. W. Robertson, Prof. L. H. Bailey, of Cornell, and Mr. John Dearness, of Ontario, arrived by more or less independent avenues of thought at the same general conclusion, viz., that our school education was too bookish and too little in touch with the realities of everyday life and occupation. I think the developing science of agriculture and the teaching of mechanic arts all over America helped to point the way towards and to reveal the benefits of training the hand as well as the head, and character through both. The Macdonald consolidated school experiment was the first conspicuous application of the new idea in Canada. Not that consolidation of sections is any necessary or successful part of it, for it has its weaknesses, but at these schools effort was made through nature study, school gardening, manual training and domestic science to make education more practical, to train the hand, to arouse interest in nature and indirectly in farming, and to inculcate the true dignity of labor—the spirit of pride in work well done—in short, to provide a better balanced education. In these regards the Macdonald experiment was a notable success. It aroused the interest of many pupils whose bent lay along pragmatic lines and who, through manual training or gardening or

household science, received the encouragement that comes from being able to excel in something or other. Apart from its primary objects, the manual work had a distinct recreative value. In fine, the new branches not only supplemented, but they promoted progress in the old ones, and this not with a few, merely, but with the generality of pupils. Such was the testimony of the teachers in the three of these schools which it has been my privilege at one time or another to visit.

The new idea grew slowly in popularity. Professional educationalists and the laity were alike indifferent, rooted in the traditions of the past. But recently the new conception has won disciples right and left, particularly among those who have been concerned in agricultural and technical education. A royal commission on industrial training and technical education has issued an elaborate report.

I do not mean to imply that the men whose names I have mentioned above originated the new idea in education. The germ of the idea is old, probably ancient. Froebel had it in part and applied it with marked success in kindergarten work. And so of others. New thoughts are nearly always an outgrowth of old ones.

VOCATIONAL EDUCATIONAL NOT THE IDEAL.

As usual with an evolving idea, there have been many misconceptions and crude opinions associated with this movement. The public is prone to jump at conclusions. When our schools are criticized as creating a prejudice against agriculture, they infer that the simple remedy is to teach agriculture. Like most off-hand suggestions, that one is ill-considered. The teaching of agriculture as a subject has been tried and did not work out well. It was too pretentious for one thing; the text-book was necessarily too general and sterotyped for another, and for still other reasons the plan was inadvisable. Agriculture as a vocation is so largely a matter of individual conditions that to teach it from a guide book as a simple subject, one requires to generalize to the point of meaningless abstraction. And how are you going to get hard-headed farmers to take stock in such teaching of agriculture as can be done by a stripling young man or a Normal girl in her 'teens? Besides, merely to ingraft agriculture as a separate subject would leave the main faults of the present curriculum unremedied. Furthermore, the study of agriculture as a craft or art would be a poor employment of time for pupils destined to enter other walks of life. I wholly concur in the objections raised by Mr. Drury in the January number of Farmer's Magazine, to the introduction of vocational training into the common schools.

A BALANCED TRAINING FOR ALL.

The true conception of educational reform is quite different. The nearest I can come to an epitome is to call it a plea for better balanced education, and while some degree of differentiation between town and rural schools may possibly be found advisable, I venture to hope that the homogeneity of our systems may be preserved.

What should be done to provide a well-balanced education? I would have at every school in town and country a plot of land where flower culture, vegetable gardening and elementary experiments with soils and crops would be carried on by the pupils under the teacher's supervision. The practical difficulty of preserving such a garden through the predatory summer season is not incapable of solution. I would have, if possible, some simple equipment for manual training with carpenter and blacksmithing tools. The interest of the future man in the shop and the woman in the home must be no more overlooked than that of the man in the fields. For the girls there would be provision for domestic science and for all the pupils a certain amount of informal, unsystematized and care-free nature study. Enforced study of nature, involving laborious tabulation and record of observations, would more than likely defeat its purpose, repelling instead of appealing. I would have practically all the text-books rewritten, introducing to the readers a reasonable proportion of lessons referring to rural affairs. They should touch human activity at the greatest possible number of points. The arithmetic would contain a good many questions on capacity and cost of silos, barns, and houses; on dairy problems, such as the testing of milk for butter fat, illustrated by actual operation of the Babcock test in the school; and indeed on all manner of practical problems. Arithmetic may be all the better taught by examples drawn from familiar things of everyday interest and practical importance. I would not call this the teaching of dairying but teaching arithmetic—which it really is. I would have the geographies, histories and other text-books revised more or less extensively, introducing such direct and indirect relation to rural concerns as may be possible. In history, especially, it is time the emphasis were transferred from war to the developing of peaceful arts and crafts among the people and to the progress of the race in self-government and civilization. I would have something of applied physics and chemistry taught in the high schools and would illustrate principles, where possible, by experimental work. The value of a soil mulch in holding moisture is a point in physics that every human being ought to know. How many do? The housewife caring for a few plots of flowers would be the better for a grasp of this principle. So of many other scientific facts. A predominant aim should be to interweave the mental and manual training as intimately as possible and relate both pretty closely to the affairs of everyday life. I would lessen the stress upon examinations and emphasize development rather than memory-filling.

Such as system, while lending itself to unification of common-school, high-school and university work, would render the training of one or both of the lower institutions as complete and practical as possible in itself. This should be the case, seeing that the majority of pupils get no further.

And such a system, I submit, will make for true breadth of outlook and sustained culture as well as for practical efficiency. Most of the subjects in our present curricula are so far removed from the concerns of everyday life that they are left behind with the school room, and culture that ceases then is like a fragrant flower allowed to wither and fade. On the other hand, a subject like civics or economics starts a lad thinking along lines which his subsequent career as a citizen in a self-governing country will lead him to follow up, thereby continuing his education from the school room right along into old age, thus making for sustained culture, efficiency and growth.

Without any profession of teaching agriculture, let us use the school course, asd especially the garden work, to illustrate such points in biology and physics as the economic value of the nitrogen-gathering bacteria on the roots of legumes, the germination of seeds, the effect of the soil mulch and any number of other points that should be generally known. The purity of procreation might be delicately suggested by a proper presentation of biology, dealing so extensively as it does with manifold reproductive processes.

LET THE PUPILS DECIDE.

There is very strong ground to be taken against elective technical courses for young children. Like Mr. Drury, I am most certainly and strongly opposed to any effort to draft tots of children by education into any particular walk of life. Utmost freedom of choice and opportunity must be guaranteed. What we should do, though, is to remove the present bias toward the academic, giving every child scope for all-round development in his early years. Then let the scholar's natural bent take its course. The child with an inclination

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AN INSPECTOR TO SPEAK.

As June is the last month of the school term, pupils, teachers and ratepayers will for a while forget the system and its shortcomings in the summer holidays. In an early fall number of Farmer's a splendid article on the Consolidation of Schools is being prepared by a wide-awake inspector of schools who has some really good information at his finger ends. Readers of these articles will do well to keep them on file for future reference.

Feeding Sick People

Some Ways of Cooking Things at Home For the Convenience of the Average House Nurse

By EVELYN ENDOW

The writer on this popular subject has had considerable experience in Domestic Science, and has now practical knowledge in the working out of her ideas in her lovely home in the Niagara district. Her hints on How to Prepare Dishes for the Sick People will be welcomed by those busy mothers and others who often ask the questions that she answers so well here.

HAVE you ever heard a doctor say, "Now keep the patient on liquids for a few days?" And have you ever noticed the lost look which comes over the face of the average amateur nurse when she hears the order? Milk and beef tea she immediately thinks of, but a patient may soon tire of these. The doctor usually orders liquids as long as there is any fever and most diseases are accompanied by some fever. So she must learn to vary her diet if possible. But after the fever breaks, in most illnesses come long days of building up when solids are gradually added. She may have to use her ingenuity to find dishes to coax an appetite or she may have more trouble to find dishes to satisfy a rapidly growing appetite and at the same time keep the dishes of an easily digestible nature. Very often a doctor will tell you that at this stage good care and proper food are of greater importance than his visits. So every homemaker and housekeeper should have on hand a goodly list of liquids, semi-solids and solids suitable for invalids, and the best place to have them is in a home-made cook book where she can find them readily in that nerve-racking time of serious illness. Of course it is of much more importance that she know how to keep her household well and how to prevent illness—but then illness will come at times. The doctor can usually tell you how to make some dishes and most trained nurses are proficient in invalid cookery but many are not, as some hospitals give very little work on either dietetics or cookery. So in any circumstances it is knowledge which does not come amiss.

Milk is the most important of all liquids—Cold milk quenches the thirst and gives nourishment—Warm milk soothes the nerves and entices sleep. For this reason warm milk is often given before the nurse turns down the light and makes the patient comfortable for the night, or if the patient wakens in the night. It is always unfortunate when a person cannot take milk readily. To some it is indigestible, to some the taste is objectionable. To make it more digestible dilute it with something, as barley water, lime-water, or soda water—Have you ever made junket by adding rennet to milk? If so you know how it sets like a jelly. Now this action is really the first step in digesting it and this is what happens in your stomach if you drink milk quickly. You have simply a large lump of junket in your stomach which must be broken up before it can be further digested and it will very often give you a pain. So if milk does not agree with you, try sipping it which means that it only forms in very small clots or try diluting it which prevents firm clots and so lessens the work of the stomach.

To make milk more attractive for those who dislike it, make cocoa or coffee with it. Boil the cocoa or coffee but just heat it after the milk is added—No drink is more acceptable to the patient who wakens early in the morning than milk coffee and of course it is ever so much more nourishing than ordinary coffee. Make your coffee very strong and then strain it and then use about one-quarter cup of this strong coffee to three-quarters of a cup of warm milk and sweeten to taste. Bovril also may be made with milk and a glass of cold milk with a tablespoon of malt extract added is liked by most people. Gruels are easily made by adding a couple of tablespoons of well-cooked porridge to a cup of warm milk and then rubbing this through a coarse strainer. Some like gruel sweetened, also a little nutmeg on top.

Milk soups are easily made especially oyster soup, but don't run away with the idea that oysters are highly nutritious. For well people they are a luxury for a quart of milk has almost the same food value as a quart of oysters and the cost of oysters is almost ten times as great as the milk. To make the soup, first wash your oysters in barely enough water to remove grit; more water will take away the flavor. Some always remove the muscle for invalids, that is that firm piece which holds the oysters to the shell. Heat your milk, add pepper, salt and a rolled biscuit and the strained oyster juice—Drop in the oysters and watch carefully until the edges curl. Remove and serve hot. Any vegetable makes good milk soup. A good basic recipe which is used at the Macdonald Institute is one-quarter of a cup of vegetable pulp (the cooked vegetable put through a coarse strainer), one tablespoon of flour and one-half to two tablespoons of butter to each cup of liquid and for liquid usually use one cup of vegetable water to one cup of milk. Season carefully. Bacon fat or a little chopped up bacon makes a good substitute for butter. Milk toast is made by thickening a cup of milk or cream with a tablespoon of flour adding salt and pepper and pouring this over hot toast. If milk is used it is better if a tablespoon of butter is added.

BUTTERMILK AND KOUMISS.

Buttermilk and koumiss are both more easily digested than ordinary milk. In fact koumiss is already partially digested. Koumiss is made by warming a quart of milk to blood heat and by adding to this two tablespoons of sugar and one-third of a yeast cake dissolved in warm water. Put this in bottles leaving at least two inches at the top and tie in the corks securely. Stand in a warm place. In twelve hours it will be strongly fermented, in twenty-four it is much stronger and in forty-eight it is full of gas. When it is fermented sufficiently stand in a cold place where it will then keep indefinitely. Find out which your patient likes best. In fact with any dish watch how the patient likes it for what is liked is always the more easily digested as the desire for it stimulates the digestive juices. Malted milk also is easily digested. It is a mixture of dried milk, wheat flour and malt flour. The directions come with it. It is always more tasty if cream is added. In fact any good infants' food is used for adults with weak stomachs.

SMUGGLING RAW EGGS.

Egg-nog is made by putting a glass of milk, a raw egg, a tablespoon of sugar, and a speck of salt in a pint sealer and shaking it until it is perfectly mixed. If you like the froth in it beat the egg separately instead and then add the other ingredients. Flavor with unfermented wine, vanilla, nutmeg, and so on. An egg white or a whole egg may be shaken into a glass of lemonade or orangeade in the same way. For the average patient the more ways you find of giving him raw egg, the cleverer you are. If a patient can take them so, the easiest way is to break the egg into a small glass, add a few drops of lemon juice and a speck of salt and have them swallow this like a raw oyster. Barley water flavored with lemon or orange and served cold quenches the thirst and gives nourishment. A good barley flour is the easiest to use but one can make good barley water by long cooking of the plain barley. Barley added to broths and soups increases their nourishment and makes them valuable for their mineral matter which is necessary in building up waste tissue.

The old reliable friend, beef tea, is best made by cutting lean beef into small pieces, putting it into a closed jar which you stand in water which is slowly brought to boiling point. If the meat is put through a meat chopper you will usually get more juice. This may be diluted as it is the pure juice of the meat. Always buy cheap cuts of lean meat. The second cut below the neck gives good rich tea. Do not throw this meat away after making the tea. It has lost its flavor but very little food value. If mixed with some fresh meat, or well seasoned it will make a dish such as shepherd's pie or curry for the rest of the family. Remember that beef tea has very little nourishment and acts merely as a stimulant for other food.

A drink which the weakest of patients can usually take is whey. To a cup of warm milk add one-quarter of a junket tablet or half a teaspoon of rennet wine. Stand in a warm place until it sets—strain through a cheese cloth, sweeten if desired, chill and serve in a glass.

There are other drinks as lemonade, black currant juice and so on which you might tabulate for reference. Wines have a valuable place especially where the heart needs stimulating but they are better taken only as the doctor orders. Of the drinks mentioned egg-nog is really the most nourishing and beef tea the most stimulating.

EASILY-DIGESTED SOLIDS.

Of the solids and semi-solids junket is about the easiest to make. If made with rennet wine no further flavoring is necessary. Otherwise it can be flavored with vanilla, cinnamon, chocolate, etc., in fact with anything not acid although it is very good served with fresh or stewed fruits. Always stand it in a warm place until it sets and then chill it. Never heat the milk above blood heat. Try the milk on your wrist. In using coffee or cocoa to flavor it do not use more than two tablespoons of the made coffee or cocoa to a cup of milk or you will find it will not set firmly.

Poached eggs are also easily prepared. Drop the egg inside a muffin ring or jar top and also cut your toast round with a cutter to make it more attractive. Eggs poached in milk are better flavored. Drop your egg into a shallow cup, pour gently over it a little warm milk and stand in hot water until the egg is jellied. Add a little pepper and salt. Also you may drop the egg in a shallow cup, add a teaspoon of butter, a little pepper and salt and stand this in the oven until firm but be sure to watch carefully as over-cooking makes it so much harder to digest. Also watch carefully when you scramble eggs and do not over-cook them. Use a teaspoon of butter and two tablespoons of milk to each egg. Put the butter in the pan, add the milk and eggs and stir as soon as the eggs begin to set. Pour over buttered or plain toast. Boiled eggs are of a more jelly-like consistency if you pour over the eggs a quart of boiling water and stand this on the back of the stove for ten minutes. If you use less than a quart of water it is apt to become cool and the eggs are barely cooked.

Boiled, baked and steamed custards are always tasty and are easily digested. Besides you can vary the flavor so easily. For boiled custard use one egg or two yolks to a cup of milk and two tablespoons of sugar. Cook slowly until the custard clings to the spoon. If it curdles from overheating, whisk briskly with an egg beater and turn into a cold dish. Serve alone or with jelly, or with fresh fruit. Boiled custard is usually poured over cake and fruit to make what is known as trifle. Whipped cream is generally added to this and naturally with these ingredients it is a very attractive dish. For baked and steamed custards use an egg to two-thirds of a cup of milk and sweeten and flavor. For any custard beat the egg only enough to mix it well as you do not wish it frothy. A cheaper steamed or baked custard is made by using bread crumbs to help thicken it. Use about a quarter of a cup of bread crumbs to each cup of milk. The safest way is to wet your bread crumbs with milk and then use an egg to each remaining two-thirds of a cup of milk, as one cannot always tell how dry the bread crumbs are. This keeps the custard always the same consistency.

Fruit souffles are harder to make than custards and less nourishing but are very tasty and easily digested. They are simply stiffly beaten eggs folded into sweetened fruit pulp and slowly baked. Taken raw they are more digestible and at the same time attractive. If served raw beat very stiff and pile on a glass dish. One egg to a quarter of a cup of sweetened fruit pulp is the usual proportion. Rub the fruit through a coarse strainer. Prune, peach, plum and so on are all good. Beat the egg-white very stiff, fold in the yolk and then the pulp. Turn in a buttered dish and slowly bake, standing the baking dish in a larger dish of water as for a baked custard. They take long slow baking or they will fall. A drop of lemon juice improves the flavor of any fruit pulp. A lemon souffle is made the same way by using one egg to a quarter of a lemon (juice and grated rind) and a quarter of a cup of sugar.

MILK PUDDINGS AND ICES.

Then there are numerous milk puddings made with or without eggs,—sago, tapioca, rice and bread—a little flavoring, perhaps a meringue to decorate it, all add to them. Granted orange rind is a flavoring that often appeals to people. Pastry has no place in a sick room nor have heavy or greasy puddings. The main thing is to avoid over-rich dishes.

Ice cream made of plain milk or cream are often wanted especially where there is a little fever. In winter if one has not a freezer one can make it very easily with one pail inside of another larger one. Be careful that the salt and ice in the larger one do not get into the smaller one when you are stirring it. However, freezers are not very expensive and if you cannot buy ice cream it is worth while buying one in a long illness.

Gelatine dishes are easily digested. If you are not used to making them and have not recipes for them, buy a good powdered gelatine as it is easily measured and then take any fruit juice you have on hand, or the juice of fresh fruit, measure your liquid carefully and soak the proper amount of gelatine. Always use a little more of gelatine on wet or hot days. Sweeten your liquid to taste. Sometimes the juice from preserved fruits is too sweet. If so, add to this a litle lemon juice. Beat your liquid and dissolve it in your soaked gelatine. If you measure everything carefully you seldom fail to have it set properly. If you wish to beat into this egg or whipped cream you must use more gelatine to each cup of liquid. A most attractive fancy gelatine dish is Spanish cream which is a thin custard set with gelatine and the white of egg beaten in. Soak one level teaspoon of gelatine in a tablespoon of water. Mix in a small saucepan an egg yolk and two tablespoons of sugar. Add a cup of milk and the gelatine and cook gently. Let this stand until cool then beat in the white of egg which has been whisked stiff. Also a few drops of vanilla or a tablespoon of wine. Fruit juice may be used instead of the cup of milk and a teaspoon of butter used to make it richer.

Pigs-in-blanket is a most desirable dish which we must not leave out. It is simply a fat oyster rolled in a slice of very thin bacon and fried. Bacon is very easily digested and the oyster is really not fried but only heated inside the bacon until plump. Pin the bacon securely before frying, with a tooth pick. This is one of the few fried dishes fit for invalids.

Scraped beef too is valuable. Scrape round steak with the point of a cooking spoon until you have a piece the size of a walnut. Add a little salt and cook until heated through in the spoon over the open fire and serve immediately.

These dishes will suggest others perhaps, for one could go on and on, on the subject. For example, some nice crisp cookies to serve with cocoa or coffee. The cleverest person, of course, will do all these things cheaply but in no cooking does one want a free hand to spend as in cooking for the sick, and after all fresh fruits, fresh eggs and the best of food in general is cheaper than tonics and long doctors' bills. And be sure to serve things attractively. Use the nicest china and cleanest linen and don't leave dishes standing about.

A patient on liquids should have something every two hours and vary as much as possible for no one tires of things like an invalid. If the patient is under the doctor's care always ask his judgment; if under yours, watch carefully the tongue and the bowels which will always tell you whether the food is agreeing or not. Ringing in the ears too signifies too much of some one kind of food. But start your home-made cook book on invalid cookery to-day.

A Review of Farm Literature

The Best Things Taken From the World's Leading Farm and Scientific Journals and Condensed Here For Our Busy Readers.

Motor Trucks for the Farmer

It Puts the Man 20 Miles from the Station on a Level With the Nearby Grower

TO the imaginative man, the place of the horse on the modern farm already has been taken by the massive motor truck and the scarcely less feebly kicking gasoline-motor-of-all-work. For though there is no new thought in the expression "the horse must go," the suggestion is there just the same—and it is a suggestion that is all the more potent because of the rapid strides that have been made by the farmer during the past year in adopting for his very own the type of horseless vehicle that was designed primarily for more densely populated trade centres, where the call of the crow and the smell of the soil never penetrate, writes Ross Babcock in the *Scientific American.*

Part of the suggestion is conveyed by the very evident manner in which the present-day motor truck builder is endeavoring, either directly or indirectly, to cater to the needs of the farmer. He is endeavoring not so much to give the farmer what the manufacturer thinks he ought to have as to give him what he wants, never once forgetting, however, that minds trained to the ways of the draft animals may not be quite as quick as are other minds to grasp the significance of specially developed vehicles that not infrequently appear to the less sophisticated layman somewhat as round pegs in square holes.

The manufacturer has shown by his attitude that he is willing and anxious to hold out a helping hand to the man behind the plow—to assist him to a better place in the world by solving at least a part of his transportation problems for him. And that the manufacturer really is sincere in his manifestations scarcely permits of question, for he knows that as a general rule the farmer will be far more considerate of his power-driven equipment than will the average individual engaged in some other business, and that the ultimate benefit will be as much his own as it is the farmer's.

In many respects the farmer whose acres lie within a radius of fifty miles or so of a big metropolis has a distinct advantage over his brothers whose farms are located less conveniently to the ultimate market. He can, if he will, transport at least a part—probably the more perishable part—of his produce by motor truck more quickly than by railroad in a great many cases, and with greater certainty that it will reach its destination on time and in prime condition.

As just one concrete example of the superiority of the motor truck over the horse-drawn vehicle, the case of one influential Long Island farmer may be cited. With a five-ton truck, this man, whose farm is situated about thirty-five miles from the New York market, carries twice, and sometimes three, times as much produce to the city in one load as by a wagon and team.

For work of the kind, the heavier type of vehicle of from three to five tons capacity is the best, and in this connection it is interesting to note the tendency toward increased efficiency by reducing idle time to the minimum. The removable body has had an exemplary effect in promoting efficiency.

Motor trucks in operation. The top picture shows a load of cabbages leaving the farm for the city market. The lower one shows the practical use that is made of the auto in transporting a cow.

THE REMOVABLE BODY.

In operation, the removable body—generally there are several of them where the volume of work warrants—is loaded while resting upon a "dead" wagon, which can be moved either by hand or by horses nearer to the work as the loading progresses. The truck chassis is in the meantime employed in doing other work, or, where several removable bodies are used, in transporting a load in one of them. "Dead" wagons are not necessary, of course, though they are a convenience. The removable bodies may be dismounted (by the power of the engine, be it added) upon suitable platforms conveniently located.

How does all this affect the farmer? Let us sup-

pose a hypothetical case which may not be so hypothetical after all. Farmer Smith is located, say, three or four miles from his nearest railroad shipping point. What will one three-ton chassis and three removable bodies do for him?

Assuming that one body is continually on the chassis *en route* to or from the station, which is the theory of motor trucking for real efficiency, the other two rest on easily erected loading platforms near to, or actually in, the field where the harvesting is being done. The truck returns from the railroad station minus its body, which is unloaded during the time the truck can return to the field, pick up another loaded body, and make the trip to the station. Arrived, the unloaded body is substituted for the loaded one and the process repeated as many times as may be necessary.

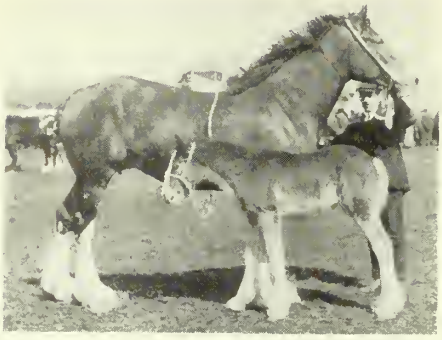
Feeding of Horses

Many Men Waste Hay and Grain and Thereby Make Rest and Fat Their Enemies

THOSE past masters of horsemanship, the Arabs, have a saying that "rest and fat are the greatest enemies of the horse," writes F. H. Sweet in *Green's Fruitgrower*. The Germans have an old proverb to the effect that "the eye of the master fatteneth his cattle." Feeding is not an exact science, but will ever remain more or less of an art. No two horses, like no two persons, require the same feed or the same amount of feed. Individuality must ever be taken into consideration. Some horses are proverbially easy keepers, while the long, rangy, slim-bellied kind are proverbially hard to keep. The ration must be made to fit the individual animal, the feeder must be on the ground and use common sense, must watch his animal, and know how he responds to the different feeding and varied care. Good, clean, comfortable, well-ventilated quarters will go a long way in keeping our horses in good condition. Good grooming, too, must be taken into consideration. People have said that grooming reduces the cost of keeping horses as much as one-fifth or one-fourth, and when you see the rough, unkept coats of many animals, you believe that there is more or less truth in this respect, as the animal which is sleek, active, alert, and willing, is always the well-kept horse.

Far too many of our horse-owners are too liberal in their feeding, giving both grain and hay, especially hay to an excess. Many feeders keep between 24 and 30 pounds of hay before their horses each day. This is an excessive amount of roughage. It produces a distention of the digestive organs, causing them to press against the lungs with bad effects.

We cannot feed horses in accordance with any set rule as to just how much or how little to feed. Most of us would do well to give less than at present. All of us can cut down feed bills by watching the markets more closely, substituting



"Nannie," champion female Clydesdale at Kilmarnock, 1914, owned by Stephen Mitchell, Boquhan, Kippen, Scotland.

cheaper for more expensive feeds in accordance with the market fluctuations. Nearly all would do well to pay more attention to the protein content of various feeds, especially when feeding brood mares and growing colts. Feeding straw or fodder to idle horses in winter means an enormous saving, while cutting down the rations of idle horses at least one-third means a proportionate reduction in bills, with horses in better shape to withstand the season's work. Good, clean, comfortable quarters coupled with good, sensible care should not be left out of consideration.

All these factors combined with a better distribution of horse work, the maintenance of no needless horses, the keeping of mares, and the growing of colts will enable us to obtain each hour of labor from our animals at a far less cost than formerly. This will cut down the largest single item in the operating cost of our farms to a material extent, and in the end will mean that we can raise a bushel of oats, or a ton of hay, for less cost than we did before.

WATERING YOUR HORSES.

Horses require from five to fifteen gallons of water a day, and the quantity depending upon the temperature and the amount of work performed. The water should be as pure as possible, clear in appearance, and free from taste, color or smell. Pure water is just as essential to a horse as it is to a man, and it is a mistake to suppose that a horse can drink badly contaminated water with impunity. Water obtained from pools or shallow wells, contaminated with surface drainage, or containing decomposing organic matter, frequently causes diarrhoea, and generally predisposes to colic. Water that contains a large amount of sediment should not be given, as the sediment causes a mechanical irritation of the mucous membrane of the stomach and intestines, called sand colic. When at rest in the stable, water should be given three times a day, and should invariably be given previous to feeding.

This latter point is of considerable importance. A horse's stomach is small in proportion to its size, and water does not remain in it, but passes speedily through the stomach and small bowel. If water is given after feeding, besides weakening the digestive juices, a considerable portion of the food in the stomach and small intestines will be washed out in an undigested state, and indigestion and colic may result. Water in small quantities can be given within an hour or so from the completion of feeding if desired. After a long journey, a good plan is to water a mile or so before the journey's end and take the horse slowly in afterwards. This prevents chills and colic, due to the ingestion of a large quantity of water in an exhausted state. An animal after prolonged exertion or fast work has his system depleted of fluid. He will not eat sufficiently until his thirst has been satisfied; therefore, the water should come first, and while the animal is still warm is the best time to give it. After standing, the body temperature falls, and to give cold water then is only to intensify the effect of cold water on the system.

Good Scarecrows

Methods of Saving Fruits and Corn from the Ravages of Birds

THERE is nothing more annoying, after having worked faithfully to bring the berries to maturity, than to have the crop raided by small birds, says J. M. Merrill, in the *Fruit Grower*.

One of my most profitable berries was the Columbian raspberry. Most growers are acquainted with this grand purplecap. With me it has been the most profitable raspberry, taking its place alongside the strawberries. I think we all acknowledge the latter to be king of the berries. Next, with me, came the Columbian. During the first few years I found that fully one-third the crop was ruined by the birds. This berry clings to the bush somewhat tenaciously, a fault that is not a fault when the crop gets the start of the pickers, since there is never any loss from dropping, no matter how ripe the fruit.

The birds pecked the fruit, which refusing to come free readily, caused the bird to seek another. In this way a large amount of nice berries were ruined while still adhering to the bush. This was a crying shame, one that I tried in various ways to remedy.

"Have you tried scarecrows?" asked my neighbor. I assured him that the birds would steal berries and light on the scarecrow's head to eat them. He then suggested the string method, that of running white twine along the rows. I tried this without success; even killed a crow blackbird and hung it up for all to see. Nothing doing.

It was the small birds, sparrows, wrens and thrushes, that made my Columbians their foraging grounds. These birds are properly protected by law and must not be killed, but it was very annoying to lose one-quarter of the crop every year, and I resolved to experiment in every conceivable way.

It was by mere accident that I discovered a remedy, one so effectual as to make me happy ever after. My little

boy had been down in the creek after fish. When he came home one afternoon, swinging his long pole, there dangled at the end of it a foot-square block tin.

AN IDEA FROM THE BOY.

"One of the men down by the bridge gave it to me," he said. "The fish wouldn't bite, so I scared 'em half to death with this. Look how it works, papa."

The boy set the butt of the pole into the ground, leaning at a slight angle. There was but a slight breeze, yet the swaying tin, hung by a string, rapped the pole, making a most startling sound.

"Don't you think that would scare 'em?" asked Freddy. I thought it would, and went to my work without further comment. During the last hours of the day, as I came toward the house a sudden clapping sound to the left started me. It proved to be the tin on Freddy's fish pole which he had left standing, and which I had forgotten all about.

As I looked up there came a sweep of startled birds over my head; also our old tabby cat dashed with frightened speed away from the vicinity.

Here was an inspiration. The next morning I rigged Freddy's pole with its hanger in a little patch of newly-sprouted corn. The crows had bothered that patch, which I had replanted twice. The inspiration worked a revolution. Not a crow bothered the corn after that.

I rigged several poles with the tin clapper attached, setting them about in the berry patch—result, not a berry was pecked at by birds that season. I had discovered a panacea for the ills of the past.

The first season I used poles set at a slant in the ground. Afterward I improved upon this by nailing a short cross-arm to the top of the upright pole, fastening the tin with a wire. These signs worked all right, save that now and then one would be dislodged because of wind and wear.

The tin, say about ten to fourteen inches, should be fastened close enough to the upright so that the smallest breeze will clank it against the pole. It is not the sight of the tin, but the noise, that frightens the birds. And I do not wonder at it. I have more times than I can count found myself springing up, ready to dodge an approaching train, when the terrific clang-clang of that simple device rang in my ears from the rear. Try this plan, friend fruit grower, and see if you are not pleased with the result.

Wm. Ham, of Ontario County, aged 83 years, shearing a 200-pound Cotswold ram on May 7th, 1914. Mr. Ham has lived in Canada the most of his life and claims to have sheared 700 sheep per year for the last 20 years. This was a seventeen-pound fleece. He says that he has seen wool sell for 50 cents a pound and as low as 8 cents a pound. In the early days the farm women used to come out and select from his shearing the finest fleece for the making of their home-spun clothes.

Western U.S. Wool Growers

W. T. Ritch, Known in Canada, has been Engaged to Introduce Australian Methods

THE adoption of the Australian system will put the wool-growing industry of the intermountain district of the United States fifty years in advance of the methods which to-day govern the shearing of wool and its preparation for market in the principal western sheep states. The great bulk of western wool can be made to bring 24 and 28 cents a pound next year, according to the present state of the market, instead of the 16 and 17 cents per pound it is now being sold for.

Making these unequivocal statements with a direction that carried conviction in every word, W. T. Ritch, the world-famous wool expert, whom President J. E. Cosgriff, of the Continental National Bank of Salt Lake City, has brought to Utah from Australia, at his own expense, to explain to the wool-growers of the western states the wonderful system Australia has developed for properly shearing and marketing its wool, delivered his first message to the sheep-men of the West in a remarkable interview following his arrival from Australia.

It is doubtful if there is any man better known in the wool-growing countries of the world to-day than Mr. Ritch. He is considered one of the greatest specialists on wool-growing and in the shearing and marketing of wool which the industry has produced in the last twenty years. He is the man whom the Canadian Government employed in 1910 to spend two years in investigating and reporting on the causes for the decline of the Canadian wool-growing and sheep-breeding industry, and whose work in that field drew the attention of the entire wool industry of two continents.

Mr. Ritch has arrived in Salt Lake direct from Australia. He will spend the next nine months in traveling throughout the intermountain states explaining to Western wool men the details of the marvelous contract system of shearing and packing wool that has put Australia a half century ahead of every other wool-growing country in the world.

Mr. Ritch comes as the personal representative of Mr. Cosgriff, who with T. W. Boyer, cashier of the Continental National Bank of Salt Lake, will defray his expenses for the year his services have been contracted for. Mr. Cosgriff first announced Mr. Ritch's employment during the sessions of the annual convention of the National Wool-growers' Association, held at the Hotel Utah, in January, and the news came as one of the most important and widely discussed features of the convention. Mr. Cosgriff has virtually grown up with the wool industry of the intermountain west, and has devoted years of deep thought and study to the problems that have confronted and vexed western sheepmen. He has been prominent in every important move toward the betterment of the industry, and when, in the course of his study of existing conditions here and abroad in the wool business several months ago, he became convinced that the Australian system solves the problem of the proper growing and marketing of wool, he determined to bring to this country the best expert he could find whose knowledge of the wool industry in general and of the Australian system in particular fitted him for the work of spending a year among western flockmasters explaining the Australian methods.

In his talk before the wool-growers at the January convention Mr. Cosgriff remarked:

"The manner in which we grow wool in the west and the way we shear and prepare it for market is radically and basically wrong, and now with wool on the free list, the very life of the industry in these western states depends, in my judgment, on the immediate uprooting of our whole present system and the substitution of those methods which have proven so wonderful a success in Australia. Someone must be brought to the west who can explain this system in its every detail, and, with no other ob-

ject in view than to do my share in bringing about a new order of things in western wool circles that will mean our salvation in the world's wool markets, I have engaged W. T. Ritch for one year."

WHAT IS THE SYSTEM.

Nearly all of the shearing in Australia is done by shearing contractors, who clip for so much per head. This contract system has developed scores of organizations of expert shearing crews and has reduced the shearing to an exact science.

The Australian flockmaster works for a clean, high grade clip of wool from the moment he begins to prepare for the shearing. His drive to the central shearing shed is made in easy stages, so as not to overheat the flock. This brings his sheep to the shearing shed with cleaner wool than would be possible if he drove hurriedly, thereby forcing excessive yolk up into the wool, where it catches and holds the dirt and dust stirred by the moving sheep. Upon arrival at the shearing shed the sheep are run into what is known as the 'sweating' pens, where they are held over night under conditions that start the yolk up into the fleece in just the right quantity.

The shearing sheds are splendidly built and are mostly in the form of a T. The sheep of but one flockmaster are handled in the establishment at any one time. The flock is driven from the mustering pens to the sweating pens and then to the feeding pens, where they are segregated—the ewes, rams, hoggets and wethers going into separate pens.

From these pens they go to the catching pens. These are pens arranged down the sides of the centre of the building, and before each pen stands the man who does the shearing. The sheep are put into individual catching pens to obviate the custom practised by so many shearers in crews not properly organized of rushing about among the sheep to try and secure the easiest sheep to shear. This excites the sheep and keeps the shearing place in a constant turmoil. Under the Australian system of catching pens, each shearer knows exactly what sheep he is to clip, and he proceeds with his work accordingly.

The moment a sheep is shorn he is rushed through a chute that leads down under the shearing shed floor, and thence into counting pens, where he is branded and counted and sent on his way to the rest of the flock.

Meanwhile, some very interesting things have been happening back in the main room. The shearer first clips the belly wool. The instant it falls to the floor—and that floor is as clean as a library table top—it is quickly but carefully gathered up and thrown into a basket provided for belly wool. The same process is performed with the hocks. These are inferior classes of wool and are kept separate.

Then comes the main fleece, and it comes off in one piece. As it drops to the floor a boy who is expert in handling fleeces picks it up in such a way that it is not broken or greatly disturbed, and spreads it on one of the rolling tables. The instant the shearing of a sheep has been completed and the sheep sent down under the building, a boy sweeps up the space in which the shearer has worked and the latter is ready for another.

From the shearer the wool is taken direct to men known as skirters and rollers. Here the fleeces are spread out and skirted—or, in other words, trimmed of those portions which are not desirable of retention with the entire fleece. Each portion trimmed off goes into a certain basket and is kept separate. After the fleeces have been rolled and skirted they go to the wool classer's table. This man is one of the most important employees of a shearing organization. Under his eye is classed all the wool that goes through the shearing station. He is lightning quick with his judgment. Not only must he class all the main fleeces, but he also supervises the classification of the inferior portions of the fleeces.

From the shipping platform the owner carts away his wool to a railroad depot or makes whatever other disposition of it that best suits his purpose or convenience for the time being. The only hands through which his wool will pass, however, before reaching the manufacturer, is that of the wool broker. There is no expensive, profit-taking middleman in the Australian system. The wool brokers sell on a commission and the wool broking establishments are wonderful institutions in Australia and New Zealand. They have perfected a system for the expeditious handling of the wool that accomplishes the work of getting the wool from the grower to the manufacturer at a minimum of expense.

Avoiding Engine Trouble

Gasoline and Steam Engines Can be so Managed as to Avoid Many Troubles

STATISTICS show that over eighty per cent. of the accidents are due not to the machine, but to the operator or owner, says Prof. Greig in *The Thresherman*. That is to say, that accidents due to mismanagement and avoidable wear and tear, etc., form eighty per cent. of the total number. If this, then, is the case, by far the greatest proportion of of the accidents can be avoided by getting a good engineer, by educating our men to make careful engineers. The Government has long recognized this fact, and for that reason has made it compulsory that men running engines should pass an examination and obtain a license. These men have to be educated not only along theoretical lines, but also along practical lines. My first point is, then, if our engineers fulfil their duties properly, eighty per cent. of the accidents will be avoided.

A Caterpillar ditching machine at work in Canada. With free ditching machine repairs, there is nothing now in the way of the general use of traction ditchers, and the country needs more of them.

In the steam engine a boiler explosion is the most destructive of all accidents due to the enormous amount of energy stored in the heated water and steam. Prof. Thurston in a paper on boiler explosions said that if the ordinary cylindrical boiler of the fire tube type was heated up to 75 lbs. pressure, there would be 52,000,000 foot pounds of energy stored up in it or enough if all directed upwards to send it one mile up in the air.

Now, all boiler explosions are due to one of the following causes:

1st—Weak design of the boiler.

2nd—Poor material or workmanship.

3rd—Corrosion or general wear and tear.

4th—Mismanagement.

The Government protects the purchaser as far as causes Nos. 1 and 2 are concerned by a very rigid specification to which all boilers entering the province must conform. The third—corrosion-and-wear-and-tear—is in the hands of the engineer to a large extent. That is to say, the life of a boiler can be greatly extended by careful management. Any engineer that will allow scale to accumulate on the inside of the heating surface of a boiler and to become baked thereon is allowing the wear to be greatly accelerated. One-sixteenth inch of scale means a consumption of fifteen per cent. more fuel and one-half inch scale means sixty per cent. more fuel, but it means more than this. It allows the sheets to become hotter by the placing of a blanket of scale between the water and the sheet. This leads to greater expansion of the sheet, with its effect of a leaky boiler, it reduces the strength of the sheet, so that sometimes you will see the sheets bulged between the staybolts. This scale may suddenly crack and allow the water to come in contact with a portion of the sheet, causing a sudden cooling of that portion of the plate which may cause it to crack. I know of one case where a farmer and his sons operated an engine for eight years and the only repairs being a new set of tubes, while their neighbor had had two engines in that time and the last one had had a new set of tubes. They were using the same water and doing the same class of work, only one took care of his boiler and the other one did not.

CORROSION OF BOILER TUBES.

We may have to use water that corrodes or pits the plates and tubes and, strange to say, pure water seems to have this effect. I know of a boiler used for

heating purposes only, where all the water of condensation is returned and every year or two they have to renew the tubes. Some of the tubes are perfectly good except for two or three spots where they are eaten through. A thin coating of scale in this case is a good thing, or the use of corrosion plates are good. I read not long ago of some boilers in marine service being destroyed by being allowed to go out of port without the corrosion plates being renewed. These plates consist of blocks of zinc hung from the bracing in the boiler so as to just clear the tubes. The acid or galvanic action, or whatever it is, that causes the pitting, seems to attack the zinc and leave the steel alone. Having a dirty boiler, then, is a sign of negligence as is also having a boiler that is pitted. A farmer wrote me last year, asking how he could get the scale out of the water legs of his boiler. It was solid for three or four rows of stay-bolts up from the foundation ring. A man who allows a boiler to get into that state is grossly careless. All boilers should be equipped with two means of feeding the water into the boiler, and both of them should at all times be in good working order. A pump and an injector make a good combination. I wonder what percentage of the engines in the prairie provinces have both in good working order. I think our boiler inspectors could give us many instances of where this is not the case. I visited a farmer shortly after a boiler explosion had occurred on his farm; in fact, I went purposely out to see it. He told me that the engineer had been trying to get water into the boiler for some time after it had disappeared out of the glass. He had driven up just before the explosion had occurred and had said to his engineer: "Why, Jack, there is no water in the glass," and his reply was that it was there a few minutes ago and he would have the injector working in a minute. Minutes go very fast in cases of this kind. Those were his last words. He was killed instantly and others were seriously injured. I believe it should be part of the boiler inspector's duties to test the boiler feeding apparatus and not to issue a certificate until it is in perfect running order. How many cases do we come in contact with where the injectors are played out and there are no spare parts in the tool box. As soon as the tubes and nozzles show signs of wear, there should be spare parts on hand, so that when they do play out the repairs are ready. They give you lots of warning by dribbling at the overflow and by not starting promptly. Often the loss of hot water from day to day at the overflow would pay for a number of nozzles. A great many accidents have occurred through low water, and an engineer that takes chances with not only his own life, but the life and property of others should not be allowed to run an engine. No matter how much he knows about it, he is not safe. In event of low water being discovered, it is not advisable to draw the fire if it is coal, it will cause a greater heat for the time being. Bank the fire with ashes, earth or green coal if it is the only thing handy, close the drafts, do not start or stop the engine, but wait for it to gradually cool off. Do not start the injector or open the safety valve. The U.S. Government tested a boiler to 300 lbs. which afterwards exploded at 250 lbs. because some one suddenly pulled the safety valve open and closed it again, causing a rush of steam to it.

THE GASOLINE ENGINE.

The gasoline engine should certainly be cleaned after shutting down and all the bearings examined both by sight and touch. Clean it from the base to the exhaust pipe. Give some attention to the batteries and see that they are kept in a dry, cool place. See that the wiring is not working loose and that the pipes, etc., are not vibrating too much when the engine is running. The engine is sometimes blamed for accidents for which it is in no way responsible. I read of one case where the engine was said to have exploded, but the facts were that the engineer had gone out to draw off some gasoline in a can. The day was very cold and he had come in and set the can down beside a hot stove and started to warm himself. The gasoline also got warm and started to vaporize, causing an explosion and fire.

My message to you is: Anticipate your troubles by careful inspection and keep your engine clean.

Matrimonial Team Work

How Clever Women Have Furthered the Careers of Their Husbands

NOT long ago an interviewer was surprised to discover that one of the greatest lawyers of the day—a man who handles national cases—has for his assistant a woman.

"Why is this?" he questioned of the lawyer. "Why not a man assistant? Do you find women more honest, quicker-witted or more faithful?"

"Not any of these," replied the lawyer. "I find that man and woman by nature approach great questions from different angles. By employing a bright woman we manage to get both sides of every question. The point she catches I might not have seen—a man would have my point of view, and my argument would lack roundness."

From cases like this Edith Brown Kirkwood, writing in *The Delineator*, evolves a far-reaching argument that the era of the business woman is to prove to man that mentally she is capable of taking a place as his helpmeet.

The lawyer's success is phenomenal.

A writer had complimented the artist because of her ability as woman and artist, when the wife of a well-known portrait-painter approached.

"Perhaps I can do all of these things," laughed the artist, "but," she added, "here comes the real business woman."

This wife is famous throughout the length and breadth of the art world of the United States for the great professional support she gives her husband. It is an open secret that while the *talent* is his, the *promotion* of the talent belongs to her. Before their marriage the talent was a flickering candle hiding beneath the artist's bushel of modesty. Since the marriage it has flamed into a veritable torch. First, the wife put her husband's artistic house in order, and then she set about keeping it "in order."

How does she do it? Primarily, by so ordering their lives as to leave this talented husband of hers free for the most intense concentration upon his work. She buys his clothes—although this is an aid not alone monopolized by the wife of the artist. She takes the care of the household management entirely from his shoulders. She even keeps the newspapers from him—or censors them—when he is doing a difficult canvas, if these papers contain news which may send his thoughts wandering from the work in hand. Unless he wishes, he need have no thought in the world outside the development of his own talent—he is care-free.

This wife, too, is original in her methods of help. She does not cater to society or solicit sitters by making of her life a round of teas and calls.

She places neither her husband nor herself in a position entailing an obligation. She asks no favors. She has found that good work speaks for itself. She does not solicit in any sense of the word—to her that would mean the cheapening of her husband's gift. She is the charming hostess to her husband's sitters, and they go away so delighted with the artist, his wife and his work that they recommend the trio to their friends.

She sees that good public views of the best of her husband's works are made, and that those who may be, should be, and are, interested, know of the exhibit.

Even in the manner in which she wins the friendship of the sitters she is unique. While the wives of other artists are in society, she remains at home to read or to pore over the scores of rare musical productions. And what does she read? Classics of ancient and modern literature, research in religious fields, the higher drama, the great philosophers. No doubt she would do this reading whether or not she was the wife of a great artist, but, being the wife, she has a purpose in view in so storing her mind. She knows human nature as characterized by sitters for portraits, for there is nothing so trying to the average man or woman of physical activities as posing. No one but the beautiful woman ever really enjoys it.

But even the beautiful woman is not so interesting to the artist as the subjects upon whose faces are traced the lines of achievement, and these are the sitters upon whom posing rests most heavily.

This artist's wife watches. She realizes that for the production of a strong portrait her husband must have before him the man of strength—not the annoyed sitter. The stronger expressions which characterize the man's face respond only to the thoughts in harmony with his chief intellectual interest. When

signs of restlessness appear she takes her cue. She wanders in unconcernedly to ask the sitter's opinion on the latest excavations in Babylon or the newest philosophy—if he is a famous clergyman. She sits down to discuss the latest French or Italian translation (for she knows both languages) if the sitter is a professor. She drifts into a conversation upon DeBussy's latest score or the humors of Wagner if the sitter is a business man to whom the study of music is a recreation.

In a moment the sitter has forgotten he is posing. His face assumes the alert expression characteristic of his mentality, and when the canvases are exhibited the visitors say to the artist:

"Your portraits are so lifelike! They so reflect the character of the subject. How do you do it?"

And the artist and his wife know the answer.

A well-known American artist struggled for years to find his niche in the world of art. During these years the children came and needed attention. Finally, from a commercial house came an offer of a big salary if he would turn his talent into their channels.

To turn to the business world he knew meant the crushing out of the ideals toward which he had labored: to struggle on toward the ideal meant possible success—but when? He went to his wife.

"Jane," he said, "a big New York firm has asked me to take charge of the art department of their advertising section."

"And you are pleased?" she questioned.

"It means money," he answered.

"But we'll not take it," said Jane.

"She lifted me higher up the ladder in that one sentence than all the work of the years had done," said the husband, in telling the story later. "The fact that to my wife my ideal was greater than the greater income set free the very soul of my inspiration." And one year later the man was famous as an artist.

Starting a Home Cannery

Where Products Were Too Cheap to Ship, They Were Canned at a Profit

FOR several years I lived near two towns in New Jersey, each of which had a factory for canning tomatoes. Nearly every farmer who lived near enough raised from one to five acres of tomatoes, writes W. H. Parsil in the *Rural New Yorker*. The superintendent of one factory was a friend of mine; also I knew many of the operatives, and often while waiting to unload I would go through the factory to watch the different processes the tomatoes went through. In that way I obtained a general idea of what was necessary to be done, which helped me much later, when I started for myself. Three years ago we moved to our present location and tried fruit-growing and trucking for the near markets, eight and twelve miles away. Every season, just when we had the most of every crop, the price would drop so low that it did not pay to cart the stuff to market. Often I have seen tomatoes as low as seven cents per 16-quart basket; wax beans five cents per bushel; Limas, shelled, five cents per quart; peas, 40 cents per bushel. I did not see that these low prices benefited the consumer any, for as soon as the market closed, the storekeepers put the retail prices as high as they liked, regardless of what the farmer received. After two seasons of this I began to look about for some means to get more for our crops, so I talked the matter over with several storekeepers and found them inclined to think very favorably of the idea of home canning if I could produce superior quality. They were willing to pay more than for regular factory goods. This higher price is necessary to make it pay, as it costs more to put up by hand than by machines, and the cans cost more in small quantities. Next I got all the reading matter I could obtain on the subject, which was very little. From the very first I made up my mind to put quality first.

GLASS OR TIN CONTAINERS.

The glass jar is largely used at home, and although growing in favor for a certain class of trade, is not used very extensively commercially on account of weight and breakage. The goods show up much better in glass, and if delivered in person to the consumer would no doubt prove very satisfactory. If the jar is to be returned, by all means charge for it when delivered and rebate when jar is returned, otherwise I find the loss is too great. The tin can is the container used almost entirely in the commercial canneries. To-day the solder necessary to seal the can is attached to the cap. Also in many canneries the open top or sanitary can has taken the place of cap and hole cans. The open can top is closed by a machine called a double seamer. No solder is used except on the side seams on the outside. These cans are too expensive, unless on a large scale, on account of the machinery. A recent improvement in tin cans is the enamel-lined can. These cans are best for such articles as raspberries, cherries, plums, beets, rhubarb, etc., which contain acid, and when packed in ordinary cans lose their color. Tin cans are of many sizes and shapes, but there are certain styles, known as Standard No. 2 cans, with 1½ or 1⅜-inch opening. This is the size usually used for string beans, corn, peas, Limas, etc.

THE OUTFIT.

In ordering an outfit it is necessary to give size of the opening you are going to use, so capping steel will fit. I had some trouble with mine until I sent a cap to factory and had steel made right size. A good outfit for a beginner would be a home size steam pressure boiler or process kettle, with rack for holding cans; a No. 7 fire-pot, burning gasoline, for heating irons, two capping steels (two sizes) to fit caps, two tipping coppers, a galvanized iron boiler for scalding, blanching, etc.; a rack to fit, for holding tomatoes while dipping; a wire basket for blanching; a pair of can tongs, knives, buckets, a table to work on, a can of flux or some acid and zinc for making the flux, and some sal ammoniac for cleaning and retinning. This outfit will cost about $40 to $45. The cost of cans will vary with style and size, also locality will make a difference, on account of freight, but should not exceed $25 for No. 2 cans, $30 for No. 3 cans, including caps, labels, cases, etc. I do not know of any can company that will sell in lots of less than 500 of one size and style. The price is the same per thousand up to $2,000, and $1 per 1,000 less for 2,000 or more up to a carload.

FILLING.

A can of food should be as full as it can reasonably be packed and processed without injuring either the quality or appearance of the contents. All food packed in liquid should be filled to within one-half inch from top, and when free liquid is present, should cover the solids. A can of corn, beans or peas when opened and found to be one inch from top would be considered slack filled, and would be hard to sell at a price that would show a profit. Cans should be tested for leaks as soon as removed from process kettle. With a small stick tap on the can while hot. If the result is a dead, dull sound, the can leaks; if clear and ringing, the can is tightly sealed. Another method is to place can in cold water. If bubbles arise, the can is not airtight. The standard packers' can has a hole in top for filling, and is furnished with a cap (to which the solder is already attached) for closing. In ordering these cans, always specify solder hemmed caps. After filling, place the cap over the opening, apply the soldering flux, press the hot circular capping steel on to the solder until melted, hold cap down with the iron rod, raise the steel an inch until solder is set. Apply a little flux to the vent hole in centre of cap, touch a drop of solder to it with the tipping copper, and the can is sealed. Beginners will find many more things to learn, such as retinning capping steel and coppers, formulas for making flux and for cleaning, formulas for processing, blanching, exhausting, cooling, syrups, etc., to write all of which would make this article too long.

Constructing a Greenhouse

Making Money Under Glass is Teaching Its Lessons to the Average Farmer

By ELUID KESTER

THE value of the greenhouse on the farm has not yet been properly grasped by the average farmer. We read of stories of success made from a few hundred feet under glass and we fail to apply this to our own case. Could we realize the advantages that would accrue to us in our own business by the construction of even a small greenhouse there would be a more general demand for the construction of such buildings at once. Where a farmer is situated near a railway station within a day or so's journey of a big consuming centre there is no question about the advisability of the venture. Even on a farm farther away from such advantages there is much money to be made from having a small greenhouse on the farm.

In planning the construction of a greenhouse on a small place from new material, there are several features worthy of consideration. The most important thing is the location so as to secure as much exposure to the sun as possible during the entire day. A location protected from north and west winds should be the one chosen, and a good place is on the side of a bank sloping to the south where the first rays of the morning sun are received.

For plants, a house with good sun, north and south would afford more space to be utilized. In such a house narrow supports should be placed near the roof and several rows of flats containing plants could easily be handled without interfering to any extent with the crop underneath as the line of shade caused by the boxes would be constantly shifting. If benches are used in the house many plants may be temporarily stored underneath each along the walks, such as old geranium stalks, and at some period of the day the sun will reach them.

THE WATER QUESTION.

Water is another item that must be considered. If the house is small, and if the finances do not permit of the building of a power pumping outfit, a good hand pump, where there is help enough to handle a hose, would answer very well, but the best course is the purchase of a small gasoline engine and good pump.

Of course there are other water supply appliances which have been written about from time to time in FARMER'S MAGAZINE. These when installed in the house or barn can be used in connection with the greenhouse.

In some cases it may be desirable to construct a lean-to on the south side of some farm building. Such a greenhouse would answer very well for vegetables,

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The Economy in Painting

This is addressed to the progressive farmer—to the man who seeks to make farming a profitable business. It points out a way to make a great saving in his yearly expenses and consequently a greater profit on his investment. In short, it indicates how he may increase his net income.

When the manufacturer finds that his business does not pay, he goes to the bottom of the trouble. He investigates the cost of his raw material. He looks into the cost of his labor. He goes carefully over each item of production cost—through everything that he uses—in order that he may see where he can save waste or useless expense and in this way add to the profit on his products.

The progressive farmer must do the same thing. He must not confine his efforts alone to making the ground yield larger crops. He must also find out how, if possible, to decrease the cost of raising his crops. Whether he raises 100 bushels or 1,000 bushels of grain, he must figure to make a profit on them or he cannot ultimately prosper.

Careful study of farm conditions reveals the fact that the use of good paint is economy, as it prolongs the life of farm buildings, machinery, tools, etc., and in addition enhances the value of the property and raises the standard of farm life.

Be sure and read "The Right use of Paint" before painting the exterior of your house. We will send you a copy free, if you answer this ad. Ask for the B59.

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although these would have a tendency to bend toward the sun.

If a house is constructed 16 feet square, or even slightly larger, which could be heated by a large cylinder stove, suitably encased, the hot water is the most desirable method of heating and the expense of adding a larger house is no greater than in a small house where one has to go to the expense of having pipe-cutting tools.

MAKING A BEGINNING.

In building such a small house containing a bed on each side, two walks and a centre bed five to six feet wide, the following information may be useful to the amateur farmer. The sides can be made either of posts boarded up or of concrete. In making concrete walls, 6 inches wide at the bottom tapering to 3½ inches at the top and about 4 feet high answer very well. One can use the Portland cement in proportions of 1 to 8 for this purpose. On the top edge for 4 feet it is well to imbed ½ inch bolts 6 inches long with enough of the bolt projecting to fasten on to a 4-inch plate on the wall.

The sash bars are 2½ inches deep by 1½ inches thick and beveled so as to fit snugly to the ridge at the top and to nail flat on the plate at the eaves. Before nailing this to the plate, thoroughly paint the bar, giving a good coat of thick white lead and oil so as to prevent rotting from moisture.

In nailing, a great many people advise the use of cut nails as they last longer than the wire nails. A ridge 2 x 6 inches and a 1-inch pipe in the same for 8 feet can be used where the ridge is 4½ feet above the eaves. There are two purlines in the house to which bars are screwed with pipe straps; one-inch pipe being used for purlines. A brace pipe should run from each purline to the centre upright post.

Ventilation can be secured by putting a row of narrow sash below the eave plates, another row must be placed at the ridge of the house, and where the house is not long this sash can be raised by having a stick hinged in each sash.

If pipe is much higher at one end than another it will be best to carry the flow pipes for hot water uphill to the far end of the house, and give the returns the same fall to the heater. If the house is level, have the high point of the system for the boiler or heater and run down slowly to the far end of the house and return the same way, being careful to have all pipes perfectly straight in line. By using this method and locating one air cock at the higher point, no trouble will be experienced with air in the system.

If we are building a house 16 feet wide by 100 feet long 2-inch pipes would be preferable and 10 lines would be required, 4 flows, and 6 returns. For a house 50 feet long 1¼-inch pipe would be very satisfactory.

A Healthful Sleeping Room

A Good Bed and Clean Air the First Essential

By GENEVIEVE

OUR first difficulty in getting good bedrooms can generally be traced right back to the building of the house, for there is an old idea which dies hard that a bedroom can be squeezed into any little hole under the roof. So long as a bed and a bureau could be crowded together, with a passage two feet wide between, the space would do for a bedroom. We are getting away from that now. We have come to realize that a room to rest in must be airy and large enough to have ventilation through opened windows without draughts blowing across the bed. This assured, we have the most important requisite of a healthful sleeping room. Another defect that may be attributed to poor architecture is the too common absence of closets, but this is not so serious because more easily remedied. A wardrobe may be built of matched boarding and finished to correspond with the woodwork of the room, or it may be made of burlap or denim stretched lightly over a framework, with a curtain at the opening. A home-made device can always be fitted up for a closet, care being taken to make it as dust-proof as possible. If the inside is painted white, besides making the room lighter it will be easier to keep it free from moths.

The more simple we have a bedroom decoration, the more pleasing and restful it will be. Light colors are to be preferred because of the decided air of cleanliness and purity they give, especially if a washable paint of flat-tone can be used instead of paper. Of course, the use of wallpaper in the ordinary bedroom could scarcely be condemned, even by an extreme sanitarian, and plain walls may become monotonous. But when a room is used only for sleeping quarters this consideration is not of much importance, and in a room that has to be swept often it is worth a great deal to have walls that can be washed. In cream, yellow, light blue, green or rose, with stenciled borders, they are very pretty, and if a flat tone is used instead of the ordinary gloss paint, we get an effect nearly as soft as with a plain paper.

But the most important feature of a bedroom is not the decoration. Its purpose is to furnish a resting place, so the first consideration is the bed, and a good bed is a pretty safe investment, since we spend about one-third of our time on it. When economy is necessary it had better be exercised in the material of the bedstead and not of the mattress and pillows. Metal beds are to be preferred to those of wood, since vermin cannot hatch on metal, and while an old walnut bedstead is a thing to be proud of, for the average home there could be nothing more sanitary or inviting than plain

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WHY THEN BUT HALF SOLVE THE problem of best results and greatest economy in dairying by the purchase of an inferior separator or go on dairying with this important problem but half solved if you are already using an inferior separator that you might so easily replace with a De Laval?

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white iron beds with or without brass cappings. A firm, rather than soft mattress and low pillows give the most complete rest for the body.

If we are to have sweet, pure air in our rooms, we will have to get rid of any tacked down carpets that let the dust sift through to be brought back and stirred about at every sweeping. It doesn't matter whether we have hardwood floors or not; a painted pine floor with a rug or two looks very well, but when a carpet is cut into rugs it is very important that they be small enough to be easily taken out and cleaned.

For the rest of the furnishings, everything should be washable and easy to iron. Curtains that have to be stretched, Battenberg doilies and dresser covers, silk and wool pin cushions, hair receivers, and what not, may be well enough for the guest-room, but in rooms used constantly they should be given no quarter by the woman who has to take care of them all herself.

A piece of furniture of untold value in any bedroom is the "cedar chest" for laundered clothes. It need not be cedar to answer its purpose either. The rattan or wicker boxes are very convenient on account of their lightness, and make a pretty addition to the furnishings. If you cannot afford these, a chintz-covered packing-box or two will do very well. Every woman knows how impossible it is to stow away in dresser drawers the shirts, waists, dresses, aprons, etc., of the weekly ironing without crushing out all the effect of her work; so the roomy boxes will be appreciated.

While the first consideration in furnishing a bedroom is to make a place where we can have clean, restful sleep, the beauty of the furnishings need not be sacrificed. Cleanliness always has a charm of its own, and every woman can devise schemes of her own in curtains, pillows, wall colors, a flower or a picture or two, that will make it the most beautiful room in the world for that particular home.

Our Pattern Pages

Patterns will be sent Post Free on Receipt of Price. Address Pattern Department, Farmer's Magazine, 143-149 University Avenue, Toronto

6555—LADIES' WAIST.

This waist is in one single piece. It is shirred at the shoulders and has a very loose arm fitting, with a sleeve that may be either long or short. The closing is in front, the neck a little open and finished with a Medici frill. Messaline, voile, chiffon, net, lace, challie, cashmere and lansdowne are appropriate materials. The waist pattern, No. 6555, is cut in sizes 34 to 44 inches bust measure. Medium size requires 2 yards of 44-inch material, cut crosswise of the goods. Price of pattern 15 cents.

6587—MISSES' BLOUSE.

This is a new form of the ever popular middy blouse. It has very deep, applied yokes, which can be omitted, and an inner shield at the neck, which is further trimmed with a wide sailor col-

lar. The lower portion of the blouse hangs straight over the hips. The low shoulder is used and the sleeve is plain at the top and laid in small tucks at the wrist. The blouse pattern, No. 6587, is cut in sizes 14, 16, 18 and 20 years. Medium size requires 3⅜ yards of 36-inch material, made with the yokes. This pattern can be obtained by sending 10 cents to the office of this paper.

6588—MISSES' MIDDY DRESS.

This variation of the sailor dress has a blouse with deep applied yokes front and back, a wide collar and an inner shield at the neck. The plain sleeves have the normal shoulder and are tucked at the wrist. The four-gore skirt has a box pleat effect in the back and a panel in the front, with side front closing. The style is suitable for linen, duck, serge and the like. The suit pattern, No. 6588, is cut in sizes 14, 16, 18 and 20 years. Medium size requires 4¾ yards of 36-inch material. Price of pattern 15 cents.

6557—LADIES' WRAPPER.

This practical style shows a wrapper which is loose in front, but fitted in the back. The high neck is trimmed with a soft turnover collar and the long puff sleeves end in a frill. Such materials as cashmere, challie, albatross, light-weight cheviot and serge may be used for this gown and also crepe fabrics, both the silk and the cotton varieties. The wrap-

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an ideal dish for the warm days when the body craves relief from heavy foods. All the body-building elements in the whole wheat grain, steam-cooked, shredded and baked in crisp, golden-brown "little loaves." The only cereal breakfast food that combines naturally and deliciously with fruits, fresh or preserved. An easy solution of "the servant problem" as well as the problem of "the high cost of living."

Heat one or more Biscuits in the oven to restore crispness; then cover with berries or other fresh fruit; serve with milk or cream and sweeten to suit the taste. Better than soggy, white flour short-cake; contains no yeast, no baking powder, no fats and no chemicals of any kind—just the meat of the golden wheat, steam-cooked, shredded and baked.

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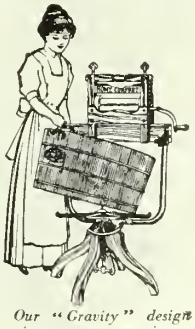
A MAN tried to sell me a horse once. He said it was a fine horse and had nothing the matter with it. I wanted a fine horse, but, I didn't know anything about horses much. And I didn't know the man very well either.

So I told him I wanted to try the horse for a month. He said "All right, but pay me first, and I'll give you back your money if the horse isn't alright."

Well, I didn't like that. I was afraid the horse wasn't "alright" and that I might have to whistle for my money if I once parted with it. So I didn't buy the horse, although I wanted it badly. Now this set me thinking.

You see I make Washing Machines—the "1900 Gravity" Washer.



Our "Gravity" design gives greatest convenience, as well as ease of operation with quick and thorough work. Do not overlook the detachable tub feature.

And I said to myself, lots of people may think about my Washing Machine as I thought about the horse, and about the man who owned it.

But I'd never know, because they wouldn't write and tell me. You see, I sell my Washing Machines by mail. I have sold over half a million that way. So, thought I, it is only fair enough to let people try my Washing Machines for a month, *before they pay for them*, just as I wanted to try the horse.

Now, I know what our "1900 Gravity" Washer will do. I know it will wash the clothes, without wearing or tearing them, in less than half the time they can be washed by hand or by any other machine.

I know it will wash a tub full of very dirty clothes in Six minutes. I know no other machine ever invented can do that without wearing the clothes. Our "1900 Gravity" Washer does the work so easy that a child can run it almost as well as a strong woman, and it don't wear the clothes, fray the edges nor break buttons, the way all other machines do.

It just drives soapy water clear through the fibres of the clothes like a force pump might.

So, said I to myself, I will do with my "1900 Gravity" Washer what I wanted the man to do with the horse. Only I won't wait for people to ask me. I'll offer first, and I'll make good the offer every time.

Let me send you a "1900 Gravity" Washer on a month's free trial. I'll pay the freight out of my own pocket, and if you don't want the machine after you've used it a month, I'll take it back and pay the freight, too. Surely that is fair enough, isn't it.

Doesn't it prove that the "1900 Gravity" Washer must be all that I say it is?

And you can pay me out of what it saves for you. It will save its whole cost in a few months in wear and tear on the clothes alone. And then it will save 50 to 75 cents a week over that on washwoman's wages. If you keep the machine after the month's trial, I'll let you pay for it out of what it saves you. If it saves you 60 cents a week, send me 50c a week till paid for. I'll take that cheerfully, and I'll wait for my money until the machine itself earns the balance.

Drop me a line to-day, and let me send you a book about the "1900 Gravity" Washer that washes clothes in six minutes.

Address me personally, S. O. MORRIS, Manager, **1900 Washer Co., 357 Yonge St., Toronto, Ont.**

per pattern, No. 6557, is cut in sizes 34 to 44 inches bust measure. Medium size requires 4⅜ yards of 44-inch material. Price of pattern 15 cents.

6558—GIRLS' DRESS.

A pretty sacque model, closed at the left side of the front and with either long or short sleeves. The very long shoulder is used and the material is ga-

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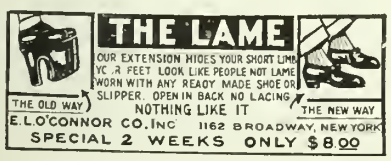

thered at the neck in both front and back. Such materials as challie, cashmere, fine gingham, voile, cotton crepe or cotton eponge will make pretty frocks in this style. The dress pattern, No. 6558, is cut in sizes 6, 8, 10, 12 and 14 years. Medium size requires 2⅜ yards of 36-inch material. Price of pattern 10 cents.

6227—LADIES' SKIRT.

Serge, cheviot or broadcloth can be used to make this skirt. The skirt closes at the front and can be made with either the high or regulation waistline. The skirt is cut in three gores. The pattern 6227 is cut in sizes 22 to 30 inches waist measure. Medium size requires 4 yards of 36-inch material. Price of pattern 15 cents.

GOOD NEWS FOR SHEEPMEN

The fact that the Western States are interested in a movement to put the marketing of their wool on a better basis and have engaged Mr. W. T. Ritch, who it will be remembered acted along with Mr. W. A. Dryden, son of a former Minister of Agriculture for Ontario, on the Sheep Commission in Canada recently, augurs well for the future of the sheep and wool industries.

Following the findings of this commission, the Department of Agriculture at Ottawa have been diligent in devising ways and means to encourage the raising of sheep in various provinces of Canada. To further aid in the shipment of the wool, the livestock branch at Ottawa is giving practical assistance in the preparation and display of the wool clip for market.

West of Fort William the association must contain at least 3,000 sheep or sufficient to comprise a carload of wool. The services of extra wool classifiers will then be engaged by the department. This should prove effective in doubling and improving the general status of sheep-raising in Canada. This department also is providing means for the distribution of information respecting domestic and foreign markets for wool.

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One Egg
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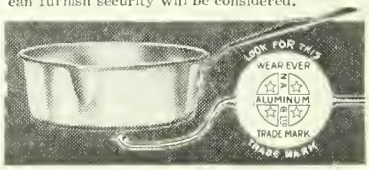
WANTED: Men to demonstrate and sell "Wear-Ever" specialties. Only those who can furnish security will be considered.



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Sheep Shearing in Australia

By W. E. BELL

The rise in the price of wool and the growing demand for breeding stock in Canada has been a powerful incentive for the farmers to follow the advice of the Dominion Department of Agriculture to go more extensively into sheep raising. The shortage of breeding stock in the Western States will swing the pendulum back to higher prices and a more popular conception of this profitable part of livestock farming for Canadian farmers. Australia has always been noted as a sheep country and this little sketch by a former Australian will be of interest.

IT is safe to say that nowhere in the world is the shearing industry so scientifically organized as it is in Australasia. Considering that the wool-growing occupies pride of place in the trade of Australia and New Zealand, it is small wonder that the methods employed by those who handle the wool of 117,000,000 sheep are so efficient.

The industry dates back to the early part of the nineteenth century, when there were only a few small flocks that had been brought from England, and the men who shepherded and shore them were, or had been, convicts; and consequently the methods were very primitive.

Up till twenty-five years ago, the Australian shearer was a man born in the bush and spent his life there. He talked horse, dog, sheep and bullock; that was the full extent of his knowledge, and he was happy in the limitations thereof. Usually he did not go very far from his own locality. In between shearing seasons, he worked on sheep or cattle stations, drove sheep or cattle, broke in horses, or engaged in fencing; and in the transformation of large unfenced cattle runs into sheep stations there was a lot of fencing done in those days. He lived roughly; he was rough himself, influenced by an environment that had changed very little for a quarter of a century. His ambitions centred for the most part round a good horse. He earned a meagre living; his habits being simple, he seldom looked for big heaps of money, not having any particular use for it, unless it were to buy himself a bit of land on which to build a home in the bush. Conservative to a degree, he looked askance at a city man and thought him something of a fool, similar to the kind of fool a sailor man regards a greenhorn from the land when he first goes aboard his ship. But that type of man has disappeared from the Australian shearing shed. The change was inevitable; the forces that worked it were overwhelming.

THE SHEARERS' STRIKE.

The beginning of the radical change may be said to date from the year 1894, the year of the historical shearers' strike. It has already been said that the old-fashioned shearer belonged to the bush and stayed there. The big strike resulted in a number of men being introduced into the bush from the cities and other large centres of population. Hundreds of them became shearers, but returned to the cities after the shearing season. They went back and met the men of the bush again, and made mates of the younger and more intelligent bushmen, and in the course of time, took their back-block friends to the city to see the sights and learn the ways of the modern world. All this meant education to the bushman. About this time a contract system of shearing began to be more widely adopted. The old system of shearers engaging at the sheep stations was supplanted by engagement being effected at the contractor's city offices. Moreover, the individual sheep-owner was no longer the shearers' employer, but the contractor was. And in the contractor's reply to his application for work, the shearer probably saw for the first time in his life—a type-written letter, and his education had commenced.

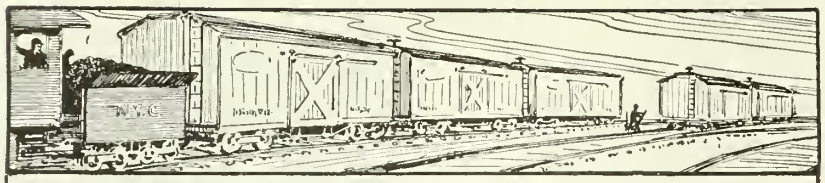
The shearer was accustomed to engage at sheds in the district where he was known. That confined him and his operations to one locality. The contractors secured sheds in other districts and in territory far away from the scene of his former life, and he sent the shearer there. Perhaps he belonged to Central New South Wales, and the contractor sent him to Southern or Central

At the shows one sees perfectly trimmed fleeces on the sheep, but the general run of wool requires much sorting.

Queensland. All this meant travel, and travel to a man of open mind and a clear intelligence spells mental development. In railway trains and steam boats he came in contact with men of scholastic attainment; he heard their expressions of opinion on a thousand and one subjects. He listened to their conversations and discussions; went to the theatres and stayed at hotels in the cities; read the newspapers and heard men of learning speak from political and other platforms; mixed with the world generally, became ordinarily informed on matters of common interest to the community, and his enunciation was as good as the next man's. These more than any other were the influential factors that made for the shearers' evolution. The Queensland shearers led the van. After the soul-trying time of '94, they stood up with the other organized workers of Queensland, and at the next general elections, after a mighty effort, sent thirty-five labor members to the State Parliament.

A few years ago the Labor element in Parliament succeeded in getting an Act passed which compelled station-owners to provide good accommodation for shearers and shed hands. It provided for a respectable room, and limited the number of occupants of each room to four. It further provided for liberal air space, ventilation, and where in the opinion of the inspectors appointed under the Act, there was a sufficient supply of water available for the purpose, shower baths of approved type were to be provided. Certainly he works hard, few men in Australia work harder, but his hours of working are limited by law, and he retires to a respectable room at night. He lives on the best the locality affords, and pays for it himself. The method of arranging the mess is simple. Before the shearing starts, rival storekeepers from adjacent towns submit their price-lists for stores to the shearers' representative, an official chosen from among themselves, who is chairman, secretary, and general representative for them on all matters. The shearer decides from whom they will deal and a supply of stores is laid in. At the completion of shearing it is all made up by a process of proportionate division, and each man pays his share of the cost. The shearers' representative signs an order for payment to the storekeeper, and the station-owner gives him a cheque, the amount being charged against the shearers' mess.

For many years the shearing industry was disturbed by strikes of some description; but the man of the shearing shed learned from bitter experience that that was no good, and resorted to compulsory arbitration. Now, the conditions under which every sheep in the Australian Commonwealth is shorn are laid down in an award made by a Federal High Court judge, and has the force of a legislative enactment. So detailed is this statement that scarcely any little dispute can arise in the course of the



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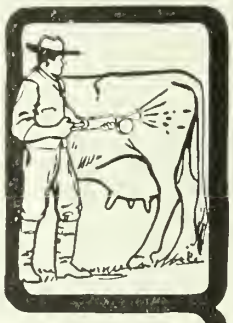

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working of a shearing shed but it can be settled by reference to this award.

The man who makes a profession of shearing in Australia to-day never does anything else. In February or March he will pack his kit or suitcase in Sydney or Melbourne and go up to North or Central Queensland, right into the tropical zone. Arriving at the town nearest to his destination, he will go to an hotel, strip off his city suit, and put away his bowler hat, and get into clothes more suitable for the trip before him. He will roll up all his impedimenta for shearing shed requirements, and strap them on a bicycle, or a motor cycle, and sail off into the great pastoral area, often hundreds of miles. He may get a run of from three to six sheds, shear anything probably from 12,000 to 20,000 sheep, and finish about November. Sometimes he may leave a little earlier, and go off south to New South Wales, Victoria, or New Zealand, preferring a cooler climate during the hot months of the year. When he gets back to town he clothes himself in his city suit, and looks as well as any well-to-do business man.

The writer has in his mind a locality in New Zealand where within a radius of a few miles from the centre where the shearing shed is situated right at the railway station, there are anything from 25,000 to 35,000 sheep. A number of years ago when machine shearing became so common, the farmers in this locality, as well as in many others, found great difficulty in obtaining hand-shearers to deal with their flocks, comprising any number from 500 to 3,000. Moreover, if it happened to be a wet season, their shearing was protracted owing to the slowness with which their sheep were shorn, so they formed themselves into a company and built a shearing shed at the railway station, putting in conveniences for sick shearers. The result was very satisfactory. Lists were made up of the order in which the flocks were to arrive at the shed to be shorn, and when the shed manager was in a position to say when he would be ready for the flock to follow the one he was dealing with, he merely rang up the telephone and advised the owner. Six fast shearers were employed, also a first-class wool-classer. Consequently a flock of say 700 sheep would be started on in the morning; they would be shorn by first-class men. The wool was classed by a practical wool-classer—a thing impossible if the flock-owner had to conduct his own shearing on his farm, because he would not have sufficient wool to pay a practical wool-classer to deal with it—the wool was properly pressed, branded and dispatched to the market, and the sheep-owner took his flock back home that night. The sheep-owner was relieved of all troubling incidentals in the conduct of his shearing, his wool was treated to the best possible advantage, and his shearing all over inside a few hours. It suited everybody concerned in the job. This system is now being widely adopted in various parts of Australia and New Zealand with the most gratifying results.

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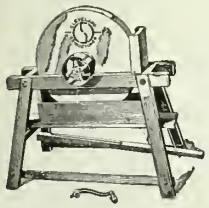

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PRACTICAL AUTO SCHOOL, 68-S Beaver St., New York

Etiquette at Weddings

By STELLA BROOKS

Perhaps there is no social function where formality is observed to so great an extent as at a wedding. June is the month of roses and weddings, which accounts for the number who want information at this time.

Q.—How long should the wedding invitations be issued before a wedding?

M. B., Ont.

A.—The invitations are generally sent out two weeks before the day set for the wedding, never less, and in no case over four weeks. These invitations are made out in the names of the bride's parents.

Q.—Who should provide the wedding luncheon or reception?

J. S., Man.

A.—All expenses are paid by the bride's family, except the fee to the clergyman: nor should the groom furnish anything for his own wedding except the ring and the bouquet for the bride, presents for the bridesmaids and best man, and some little tokens for the ushers.

Q.—At a strictly family gathering, how should the guests go in to luncheon, and how be placed at the table?

Alice D., Alta.

A.—First, the bride and bridegroom; then the bride's father with the bridegroom's mother. The best man with the head bridesmaid. The remaining bridesmaids with the gentlemen who are to take them in to luncheon. The rest of the company should follow in the wake of the bridesmaids. The bride should take the bridegroom's left arm.

When a standing up luncheon is given, small tables are arranged for the convenience of the bridal party on one side of the room, while a long table occupies the centre of the room.

When a sitting down luncheon is given, the bride and bridegroom should sit either at the head of a long table or at the centre of it. The bride at the bridegroom's left hand. The bride's father should sit next the bride with the bridegroom's mother. . . . When the bride and bridegroom sit at the centre of the table, the bridesmaids should sit beside them with the gentleman who has taken them in to luncheon. Each sitting at the gentleman's right hand. . . When the bride and bridegroom sit at the head of the table, the bridesmaids with the gentlemen who have taken them in to luncheon should place themselves next the parents on either side of the table, dividing their number into two groups.

Q.—How should a widow-bride dress for a wedding?

M. J. C., B.C.

A.—She should choose some color other than white, and should wear neither veil nor orange-blossoms. She should also be unattended.

Q.—What is the usual form in connection with a church wedding?

F. K. R., Ont.

A.—The carriage which is to convey the bride to the church should be provided by the father. The bridesmaids and her mother should precede her to the church to receive her at the church door, but when she has no bridesmaids, her father generally precedes her and her mother accompanies her in the carriage. The organist

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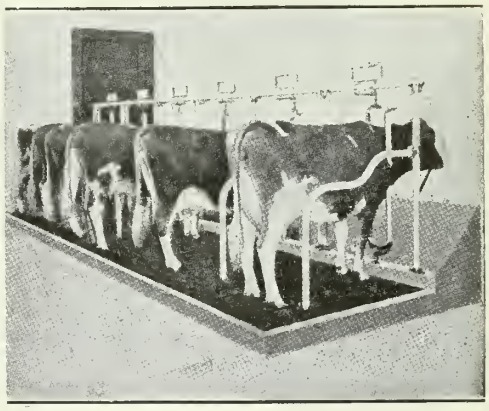
you will ensure healthier and better stock.



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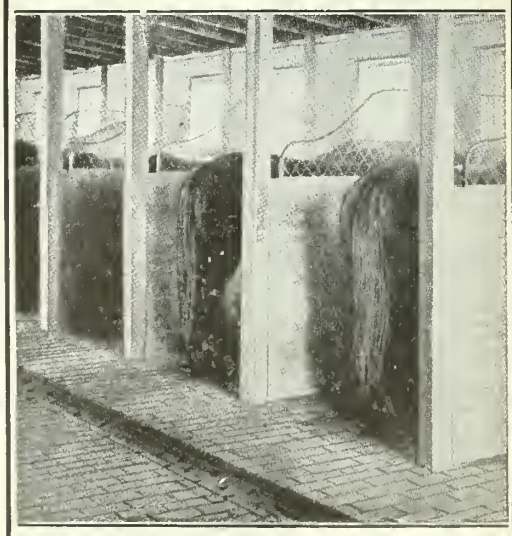

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SYNOPSIS OF CANADIAN NORTH-WEST LAND REGULATIONS

THE sole head of a family, or any male over 18 years old, may homestead a quarter-section of available Dominion Land in Manitoba, Saskatchewan or Alberta. The applicant must appear in person at the Dominion Lands Agency or Sub-Agency for the District. Entry by proxy may be made at the office of any Local Agent of Dominion Lands (not sub-agent), on certain conditions.

Duties—Six months' residence upon and cultivation of the land in each of three years. A homesteader may live within nine miles of his homestead on a farm of at least 80 acres, on certain conditions. A habitable house is required in every case, except when residence is performed in the vicinity.

In certain districts a homesteader in good standing may pre-empt a quarter-section alongside his homestead. Price $3.00 per acre.

Duties—Six months' residence in each of six years from date of homestead entry (including the time required to earn homestead patent) and 50 acres extra cultivation.

A homesteader who has exhausted his homestead right and cannot obtain a pre-emption may take a purchased homestead in certain districts. Price $3 per acre.

Duties—Must reside six months in each of three years, cultivate 50 acres and erect a house worth $300.

The area of cultivation is subject to reduction in case of rough, scrubby, or stony land.

W. W. CORY,
Deputy of the Minister of the Interior.

N.B.—Unauthorized publication of this advertisement will not be paid for. —58783.

should be at the church half an hour before the hour of the ceremony and the sexton should have all preparations made such as awnings at the entrance, ribbon barriers across the aisle, floral decorations, etc. The sexton should stand at the door to receive the admission cards as people enter the church. The invited guests are met at the foot of the centre aisle by the ushers. An usher offers his arm to a lady and conducts her to a seat. The friends of the bride are seated at the left and the friends of the groom at the right. At the appointed hour, the clergyman appears and the groom accompanied by his best man emerge from the vestry, and takes his place at the right awaiting the arrival of the bride. At this time, the organist commences to play the wedding march and the party move up the aisle in the following order: First, the ushers in pairs, then the bridesmaids, also in pairs. Sometimes a little "maid of honor" carrying flowers, precedes the bride. The bride, leaning on the arm of her father, comes last. The ushers and the bridesmaids separate as they reach the altar, going to the right and left. At the altar the groom receives the bride from her father's hand. The latter steps back a few paces, but remains near enough to "give away the bride." When this point in the ceremony has been passed, the father joins the mother in the front pew. The bride stands at the left of the groom during the ceremony and generally takes his left arm at the close.

WEED PESTS

Not only in the older parts of Canada, but on the prairies, the question of noxious weeds is a most pressing one. Owing to the scarcity of help on the average farm, the usual cultivation is neglected too often with the result that weeds flourish. Then again in the older parts of the East, much of the spread of these weed pests is due to sheer neglect and total disregard of the Weed Act.

A wise movement has been made by the Welland County Farmers' Institute in sending out a circular to all their members, calling their attention to the deplorable lack of any systematic enforcement of the Weed Act, and to the immediate necessity of protecting the careful farmer by forcing the careless one to cut all weeds on his property.

This Institute recommends a change in the Weed Act, to have the Government amend Chapter 279 Revised Statutes of Ontario, so as to have the inspectors appointed by the Government rather than by the local municipality. When inspectors are appointed by the local council, the careless farmers who neglect to cut weeds in time to prevent the ripening of seed, besiege the council to stop the work of the inspector. Members of the council, fearing that their re-election is thus endangered, in turn interfere and recall the inspector and a good law becomes inoperative.

Where there is no one in the township to enforce the Weed Act, many pathmasters neglect their duty, and leave unsightly noxious weeds standing from year to year along the sides of many of our highways. From this most prolific seed-bed adjacent farms are made foul and seeds are carried on the wheels of vehicles and distributed along the roads over wide districts of country.

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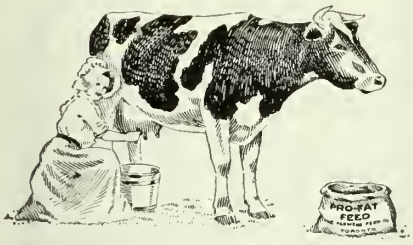

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For wood track, steel track, rod and cable track. Made entirely of malleable iron; no springs. Fitted with our patent deadlock. 25,000 of our Haying Machines in use, is the best guarantee that we build them right. 4

Write for catalogue of Carriers, Slings, Stackers etc—and name of dealer near you who handles Buchanan's. M.T. Buchanan & Co., Ingersoll, Ont.

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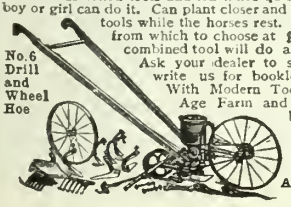

No. 6 Drill and Wheel Hoe

The Bateman-Wilkinson Co., Limited
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The Kitchen Garden

A Talk About What to Plant and How to Take Care of It

By WINNIFRED MARCHAND

FOR the woman who likes to be out of doors, and who has the Dutch housewife's forethought for the feeding of her household, no pink tea could ever hold a candle to the joys of a kitchen garden. She may not have time to do all the work of taking care of it, but an hour or two spent with the growing things makes an agreeable break in the routine of housework—and she has something to show for it.

As a rule we don't have enough variety in our farm gardens. The plot planned to keep the table well supplied with a variety of fresh vegetables throughout the entire growing season, has a decided economic value as well as being far more interesting from a gardener's standpoint. A bed of New Zealand spinach is one of the most profitable vegetables for a kitchen garden. The seed is rather expensive, but in about one month after planting a meal can be had from the extreme top of the plants. It should never be allowed to grow beyond six inches in height, and if kept cut will supply greens as sweet and tender in August as in May.

We should not have to depend upon the field crops for our green corn and peas. A bed of garden peas and a corn patch across one end of the garden, and even a few rows of pop corn are well worth their care. Cauliflowers are not difficult to grow, and being one of the most digestible and palatable of table vegetables might be used a great deal more than they are at present. Brussels sprouts, salsify, and asparagus should have a place in every home garden, with a few rows of strawberries to supply the family with fresh fruit, even if you have to buy all that you need for preserving, but fifty good plants when they begin to bear well should supply from ten to fourteen quarts a day.

A novel way of growing cucumbers if you want to force a few plants without much trouble is to take an old barrel, cut it in half and nearly bury the top half in the ground. Fill it with well-rotted stable manure and plant some early White Spine cucumbers around the outside of the barrel. Each day before sprouting and for several weeks afterward pour a pail of water into the barrel. The manure will be thoroughly leached out keeping the surrounding soil moist and fertilized. This method gives an astonishing yield of cucumbers. It is said to work equally well with tomatoes.

GROWING FLOWERS AMONG THE VEGETABLES.

Flowers to be cut freely or given away are better to be planted in the vegetable garden than at the front of the house. This place might well be reserved for showy flowers of the more lasting varieties, leaving the sweet peas, asters, sweet alyssum, mignonette, phlox, nasturtiums,

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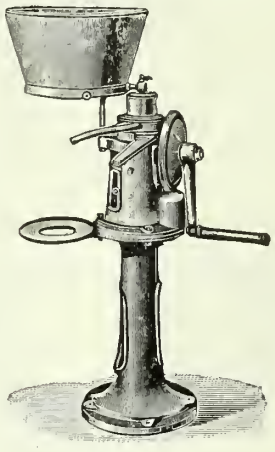
Combines **Efficiency** with **Durability** with **Simplicity** of Construction.



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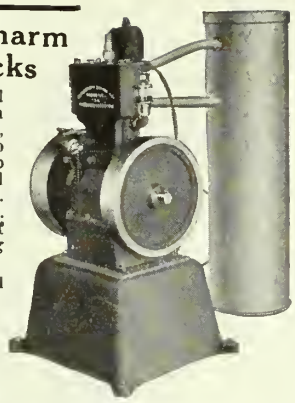

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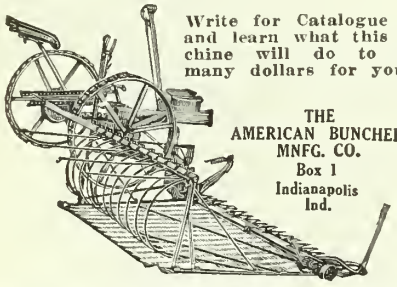

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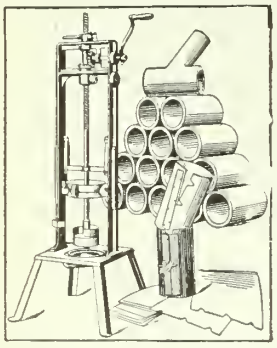

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Tells why chicks die

J. C. Reefer, the poultry expert of 1320 Main St., Kansas City, Mo., is giving away free a valuable book entitled "White Diarrhoea and How to Cure It." This book contains scientific facts on white diarrhoea and tells how to prepare a simple home solution that cures this terrible disease over night and actually raises 98 per cent. of every hatch. All poultry raisers should write Mr. Reefer for one of these valuable FREE books.

and other annuals to go in rows in the kitchen garden where they are more easily sowed and cultivated and may be picked freely without considering disfiguring the place. Perennials are not planted here as they would be a nuisance when it came to digging or plowing the garden.

Hollyhocks blooming in rough corners, and scarlet runners climbing over the woodshed and porch posts will make your back yard the beauty spot of the estate. No doubt it is the part you see most of, so it should be worth some attention.

Peas are troubled with mildew, weevils and pea aphids. For the mildew, spray with Bordeaux mixture or powder the plants with sulphur. The weevil comes from bad seed, and cannot be remedied by application of drugs. The lice or aphids will die if brushed from the leaves in the middle of a hot day.

To save beans from both blight and pod spot, spray with Bordeaux mixture as soon as the third leaf develops and about every two weeks afterwards. A little kerosene sprinkled on the ground near the bean row will keep away maggots.

The melon worm feeds on melon leaves, and eats holes in melons, cucumbers and squashes. Dust the vines with helebore. The cucumber beetle feeds on the roots. Tobacco powder sprinkled over the plants or flour poisoned with arsenic, will get rid of them.

Asparagus is often troubled with rust. Soon after cutting the crop, dust the plants with sulphur while the dew is on. Repeat the treatment once a month. The small asparagus beetle, easily known by its brilliant colors of red, yellow and black can be destroyed by sprinkling with air-slaked lime. Another pest, the asparagus miner, gets under the skin of the plant near the ground and lays her eggs. Leave a few uncut plants for a trap and about the first of July pull the plants out and burn them.

To guard against potato scab, the cut seed may be soaked for two hours in a solution of half a pint of liquid formaldehyde to fifteen gallons of water, or where you have large quantities of seed for field planting a better way would be to spread the seed out in an air-tight room and burn a formaldehyde candle. For leaf blight spray with Bordeaux mixture. By adding an ounce of Paris green to every ten gallons of this, you can destroy the potato bug at the same time.

Cabbage and cauliflower seem to be afflicted with the same pests. Club-root, a disease which causes the roots to swell and prevents the plants from heading, may be prevented by liming the soil, and by crop rotation. Maggots, worms and beetles which attack the cabbage may be destroyed by spraying with arsenate of lead, while the plants are young. Use two ounces of the poison to five gallons of water.

This would seem to require a long list of drugs. There really aren't very many and it may mean a good deal to have them on hand early in the season.

Lump Jaw

The first remedy to cure Lump Jaw was

Fleming's Lump Jaw Cure

and it remains today the standard treatment, with years of success back of it, known to be a cure and guaranteed to cure. Don't experiment with substitutes or imitations. Use it, no matter how old or bad the case or what else you may have tried—your money back if Fleming's Lump Jaw Cure ever fails. Our fair plan of selling, together with exhaustive information on Lump Jaw and its treatment, is given in

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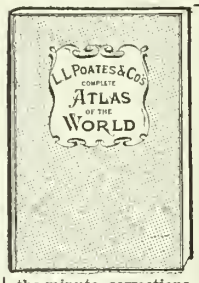

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VARICOSE VEINS, BAD LEGS, ETC.

are promptly relieved with inexpensive home treatment. It absolutely removes the pain, swelling, tiredness and disease. Full particulars on receipt of stamp.

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Actresses in the Home

Some Favorite Recipes and Kitchen Delights of Stage Celebrities

By MARGARET BELL

Home life is the average woman's joy spot. It is there that she is seen at her best. This is particularly true of that class of professional women known as actresses. Many of them are daughters of the farm, and know the value of dietetics and motherhood. The following article is written by Miss Bell who has a personal acquaintanship with the leading Canadian women on the stage. Many of those in this charming sketch will be familiar to our readers.

"NEXT time you're in new York, just come and see me, and I'll show you that garlic can be used in almost everything, with the best possible results."

So spoke Blanche Bates, one of the most popular actresses on the stage to-day. She was discussing the subject of universal interest, namely, homecooking. In the dressing room with her was Hannah, a black - faced maid, who corroborated everything her mistress said. The writer had sort of scorned the idea of garlic in every salad, made a wry face at the mention of it, and all that. That is what made Miss Bates so emphatic in her speech. As a matter of fact, she is very fond of going into the kitchen and mixing up a salad herself. It is a pleasant deviation from the mental work, which occupies her attention every night. And cook knows when Miss Bates takes the wooden basin and salad spoon into her own hands, that something good is bound to result from it.

Olive Wyndham likes to feel the touch of dough, but she is more successful at cake-making than at bread.

One of her most popular salads is called the Seville salad. It is made with apples, bananas, hearts of celery, chopped nuts, water cress and head lettuce. This is served with a mayonnaise dressing.

At one time, this salad became so well-known in a certain New York hotel where Miss Bates lived, that the chief steward changed its name. All the time that Miss Bates lived there, it was called the Blanche Bates salad. Then she moved out to her beautiful country home, where she could keep the pets her heart craved. Horses and dogs and cats. That is where she lives now.

Another actress who is fond of going into her kitchen and mixing something in the wooden basin, is May Irwin, the popular Canadian, who came originally from Whitby, Ontario. Miss Irwin, who is in reality Mrs. Kurt Eisfeldt, has a beautiful summer home on the Hudson, where she has merry week-end parties, all through the hot summer months. She is particularly partial to all things Canadian. For example, if she sees that they are featuring Nova Scotia apples in the markets, she immediately sends for some. Then, many of the American shops advertise Montreal melons. Miss Irwin always looks out for these, when summer swings around toward August. Then there may be Muskoka lamb. It is often featured in New York. That is immediately put on the bill for dinner. And so on and so on.

And when the apples arrive from Nova Scotia, Miss Irwin dons her huge kitchen apron, and goes out into the kitchen to make apple pie. It is a significant thing that the first inspiration she has to make fresh apple pie, is the arrival of the Canadian apples at the American markets. She can make more than pies too. She likes all sorts of sauces, and rather prides herself on her

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Combination Vacuum Cleaner and Carpet Sweeper.

IT thoroughly removes all dust and dirt from carpets or rugs, with very little effort. Keeps the dust and dirt confined. Easy running, light, powerful and adapted to every need in the home. Runs like a carpet sweeper. Weighs only ten pounds. Contains three powerful bellows, assuring continuous suction. Has twelve-inch carpet nozzle. Beautifully finished in wooden case. Fully guaranteed. **Write for interesting folder.**

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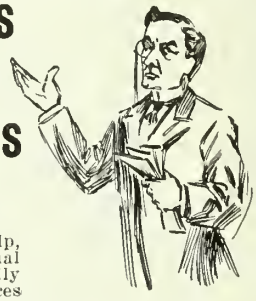
BLOTCHES
BLACKHEADS



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"Although I don't know the taste of liquor, I had what any person not knowing me would call a 'whiskey nose.' I used your treatment according to instructions for about six weeks, when it appeared to be quite well, and there has not been a spot on it since. Before using your treatment I consulted three doctors, who all said there could be nothing done for me. It troubled me for about ten years. During the last two years it was sore to the touch all the time. I was even told there was cancer starting on it. Your treatment has done so much for me that I would consider the money well spent if it had cost me ten times what it did. You may use this unasked testimonial any way you wish."

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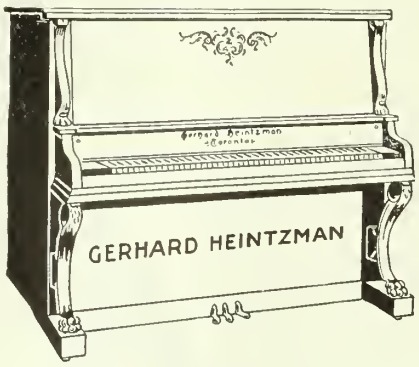

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Gerhard Heintzman

CANADA'S GREATEST

Piano

in a position in the hearts of Canadian families never approached by any other make. We have always made it good, its thousands of friends have made it famous.

We would like to explain to you the reasons for the remarkable endurance of this instrument. Let us send you our Art Catalogue, giving fullest particulars.

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When Mother Bakes

with **Reindeer Flour** there is a scramble to the table. Every one enjoys the sweet, wholesome bread that mother makes since she used **Reindeer Flour**. It is especially a bread flour. Order some **Reindeer Flour** to-day and you'll be delighted with the results.

Most all up-to-date Groceries like to stock Reindeer Flour.

PETERBOROUGH CEREAL COMPANY
SIMCOE STREET **PETERBOROUGH**

TRADE MARK

ability to make them. These range all the way from mint sauce for the Muskoka lamb, to pudding sauce and dressing for fresh vegetables.

She is a refreshing bit of femininity is May Irwin. Her heart is as big as the free outdoors which she loves. She would share her last dollar willingly, with anyone she felt needed it. Canada is very proud to allude to her as "our own May Irwin."

Julia Marlowe, the greatest of our Shakespearean actresses, also likes to get away from work, into her big, white kitchen. She has a charming home in the Catskills, where she invites her friends, in summer, to come and romp with her, across her meadows and through her woods. She is only a child when she goes to her summer home. And she romps with her big dogs, two greyhounds who await her coming as eagerly as any child. She reads and writes and studies her roles out of doors. In fact, she lives in the outdoor world, all the time she is at her country home.

USES ALUMINUM WEAR.

That is, almost all the time. For she knows how to appreciate fresh, country air, after a season in hot, stuffy theatres. Some of the time spent indoors is taken up in her kitchen. She is very fond of this kitchen, by the way, very proud of it too. Which she might well be. For it is always immaculate and white, with every saucepan shining, and neatly in its place. One of Julia Marlowe's pet sayings is that there is a place for everything and everything should always be in that place. She carries out this wise slogan, to the last letter. Her saucepans are all of aluminum, and are always shining bright enough to allow them a conspicuous place on the dining table, if necessity required it. Her saucepan lids all stand in a row on neat shelves above the kitchen sink. There is one particular lid for each saucepan, and no other pan can borrow it. Thus does system make of the kitchen a veritable show place, to greet every visitor's eye, who goes to the Marlowe home in the Catskills.

Miss Marlowe is particularly fond of cakes. All sorts of them, she can make from the small dainty one called a rock to the great fruit cakes, as indigestible as they are great. Best of all she likes the small sponge cakes, with a dainty bit of icing on the top. She makes this icing in all colors, mauve, pink, yellow, brown and white. They are particularly tasty to serve out on the big veranda, with cool drinks, when parties of friends motor out from New York.

Edith Wynne Matthison is another actress, who has her favorite recipes for good things to eat. At first, she had some difficulty with her cake-making. She could not measure the correct amount of flour or sugar. Her cookies, which she was most anxious to make well, fell flat. They spread out in the pan, when they were being baked. They were a dismal failure. And Miss Matthison had friends coming in to dinner that night, particularly to taste her cookies.

Well, it has been said that practice makes perfect. Miss Matthison was always a strict believer in this. So she went at it again. She read her recipe over very carefully, made a change in the mixing of some ingredients. Rather in the intermixing of them. For it was in this that she had erred. And she found out that she had put in too much butter. The recipe called for a certain amount, and Miss Matthison, thinking that an additional bit would make the cookies richer, added it. With the disastrous results above mentioned.

However, the second attempt proved much more successful. When the guests arrived, they found their hostess rather flushed as to countenance, with traces of flour in her nails, and on her hair. But apart from that, everything was all right. And it didn't really matter that the real cook had to put the pan of cookies outside the window of a seventh-storey apartment to cool. Only there might have been a terrible spill if they had happened to fall.

HAS NINE CHILDREN.

Madame Schumann-Heink, the great contralto, is never so happy as when she is at her farm, surrounded by her nine children, all feeding the chickens or gathering the eggs. Next to that, she enjoys a couple of hours in the kitchen, showing the German cook how she used to make her favorite dishes over in the Fatherland. She is not afraid to roll up her sleeves and demonstrate her knowledge either. She always says that people over here in America do not realize the nourishing quality of the humble lentil. It is most inexpensive and can be made very tasty, but few people ever have it on their tables, probably because they think it is too humble a dish, probably because they do not realize how valuable it is, as a food. Madame Schumann-Heink's method of preparing this nourishing adjunct are soaked seven or eight hours before being put on to cook. She puts them in hot water, and cooks until they become a pulpy mass. In the water in which she has boiled them, she puts a stick of celery and a bit of parsley. This is for flavoring purposes only. When the lentils become pulpy like mashed potatoes, she presses them through a sieve and seasons with butter and salt. Before serving she adds four or five tablespoons of minced onions which have been fried. This is a typical German dish, and one of Madame Schumann-Heink's favorites. Can you wonder that she is tired of the hotel foods, long before her season is ended?

Jane Cowl, the most beautiful woman on the stage to-day has her preferences too, also her pet recipes. It is fun to go into the kitchen, she thinks. It is pleasant after a hard night's work, at any rate. She usually gets to her apartment about half past eleven at night. It is then that she has the meal she enjoys the most. For being of a nervous temperament, like most players, she cannot take much for dinner, at six o'clock, She does not eat much at noon, and never gets up in time for a breakfast. The exacting work of the evening needs much reserve force. Miss Cowl plays

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For 30 years Tanglefoot has been America's surest, safest, most sanitary fly-destroyer. It is non-poisonous, easy to use, and costs but a trifle. Each sheet is capable of killing 1,000 flies. And Tanglefoot not only kills the fly, but seals it over with a varnish that **destroys the germs** as well. In buying, ask for the genuine "TANGLEFOOT"—it costs you no more and lasts twice as long as the no-name kinds sold merely as fly-paper, or sticky fly-paper.

Made only by The O. & W. Thum Co., Grand Rapids, Mich.

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Open **Tanglefoot** slowly. In cool weather warm slightly. For best results place **Tanglefoot** on chair near window at night. Lower all shades, leaving one at the **Tanglefoot** window raised about a foot. The early morning light attracts the flies to the **Tanglefoot**, where they are caught. (33)

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L.312

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The accompanying cut of ladies' coat is one of our new creations in Ladies' Knit Coats for Spring. This is a very classy garment. Ask your dealer to let you see this and other lines in our Spring range. Take this cut to your dealer's and ask for "MONARCH-KNIT."

The accompanying cut of Man's Coat is a line we have gotten out especially for shooters. It insures free movement of the arms and protects you against unfavorable weather. See that you have one of these coats in your outfit for shooting.

"MONARCH-KNIT" is the Standard for Style, Quality and Workmanship.

Monarch Knitting Co., Limited Head Office: Dunnville, Ont., Can.

Factories at Dunnville, Ont.; St. Catharines, Ont.; St. Thomas, Ont.; Buffalo, N.Y.

The gathering of the clans

"On to Toronto!"

You have doubtless noted with gratification the great movement for honesty and square dealing which is revolutionizing American and Canadian business methods. Our goods, our salesmanship and our advertising are being cleansed and vitalized by the spirit of truth and sincerity.

As a result we see a growing public confidence in manufactured products and their advertising —a confidence which, if preserved and fostered, will decrease our costs, increase our profits, and become a business asset of incalculable value.

Foremost in the fight which has brought about this revolution stand the Associated Advertising Clubs of America, whose emblem is shown above. If you are a business man, interested in the manufacture, distribution, or selling of commodities of any nature, you should attend the Tenth Annual Convention of the A. A. C. of A. at

TORONTO

June 21-25, 1914

At this Convention you will hear the inspiring story of the manner in which these tremendous reforms are being effected. More than this, you will hear the problems of distribution, merchandising, salesmanship and advertising discussed by able and successful business men, in a series of open meetings.

These meetings will cover the questions of chief interest to the 10,000 business men comprising the 140 clubs of the A. A. C. of A. —*your own* problems included.

EDWARD MOTT WOOLLEY, the famous writer on business topics, has written a booklet entitled *"The Story of Toronto."* This booklet describes in a forceful, intensely interesting manner, the wonderful work the A. A. C. of A. are doing for clean advertising and square business methods, and the significance and importance of the Toronto Convention. This booklet will be sent free to all business men asking for it on their business stationery—together with detailed facts as to the convention programme and rates for accommodations.

Address Convention Bureau

Associated Advertising Clubs of America

Toronto **Canada**

heavy, emotional parts, this year and the past in "Within the Law." As a result, she does not rise at the time when most people do. That is why she does not eat breakfast.

Supper is her best meal. A dainty supper after the play, when most people are thinking of going to bed. Consequently, the chafing-dish forms an important part in her kitchen regulation. She is partial to the chafing-dish because it is a simple solution to the supper problem. One can always make dainty supper dishes on the chafing-dish. And Jane Cowl is fond of dainty dishes. That is why she likes to cook with the favorite supper contrivance. And one of the favorite dishes she cooks is a most indigestible one surely. Or such it would seem to all of us more prosaic persons, whose meals are regulated by our natural appetites. It is tomato rarebit, and is made with chopped green peppers, chopped onion, a bit of chopped celery, one-half cup of canned tomato pulp, three-fourths of a pound of soft, mild cheese, cut in small pieces, and half a cup of cream, into which is beaten an egg. This delectable dish is served on squares of buttered toast. One may readily vouch for its tastiness, but, as mentioned above, what of its digestibility?

It probably seems natural that Alla Nazimova, the great Russian actress, should have a preference for caviar and Russian dishes. Though, if the truth were told, caviar is not so Russian as it seems. In reality, it goes from Canada to Russia, and is packed there, sent all over the world as a Russian product, and brings in an exorbitant sum. But that is neither here nor there.

Madame Nazimova likes caviar. And she likes combinations of caviar and other things. Such as tomato, peppers and olives. She likes to go into the kitchen and concoct all sorts of Russian dishes, likes this too. And she makes Russian stews, most complicated sort of things made of everything in a well-managed cupboard. Cabbage, carrots and onions, all kinds of vegetables go into these stews. And a bit of pork goes in too, for flavoring. So that one would say the Russian taste ran to both extremes. Delicacies and more common foods. One can easily imagine Madame Nazimova enjoying both, and refusing both, if the mood happens to strike her that way.

Grace George is never so happy as she is around Christmas time, when she makes home-made candies for her two children. And there are many more dainty bits from the same hands which make the candies. She romps all day with the children, and reads them wonderful fairy tales. Around about five o'clock, when the fire-place sends its glow across the room, the little party have a real taffy pull. Miss George, who is in private life Mrs. William A. Brady, is just as enthusiastic about it as anyone too. And she does not worry if her hands are sticky, or her face smeared. It is all in the fun. And she goes back to her work, fully repaid for her trip home which may have taken a day and a night.

Louise Homer, the well-known contralto, the mother of five lovely children, and herself one of the most beautiful women before the music-loving public to-day, likes nothing better than a few hours in the kitchen, mixing bread and watching it rise. Madame Homer can make beautiful bread. It is one of the rare treats of the season, when she invites some of her friends to her home, to taste some of the bread she herself has made. She loves her home, and spends every available moment there, when she is not singing.

Olive Wyndham, another successful actress, likes to feel the touch of dough. But she is more successful at cake-making than at bread. She has many wonderful recipes, for all sorts of cakes, from angel's food to tea biscuits. She does not seem to mind the price of eggs in the winter time, and often they go soaring to eighty cents a dozen. Her recipes, for the most part, call for a great many eggs, which is altogether adverse to the principles of some of the Women's Leagues, which want to prove that just as good cakes may be made without eggs, as with them.

No matter what other pursuits women may follow, no matter how hard they may fight for equal rights and the vote, and all the rest of it, they will always retain that trade-mark of femininity, the desire to cook some delicacy which will tempt their palate.

THE OLDEST DOMESTIC FOWL

There is no known domestic fowl that antedates the goose. It is said that the tribes of Israel used geese for food, while at the beginning of the Christian Era geese were plentiful in all localities. When Caesar landed in Britain he found geese there. In 1854 Martin Doyle, one of the earliest writers on modern poultry culture, made the statement that a Boston poultry dealer had in one week killed and dressed for the London market 2,400 geese besides 1,000 ducks and 500 turkeys. At this time this number of fowl seemed astonishingly large. Now it is no uncommon sight to see 20,000 geese in the fattening yards near Boston. A familiar picture in Russia is to see carloads of geese on their way to market. A well-fattened goose is a desirable morsel for the New Year's table. In England barley meal and Sussex oats ground fine are mixed and used as a soft food. In the New England states corn meal, ground oats, wheat middlings and some meat are mixed, cooked and fed as a warm mash. Four weeks of such feeding doubles the weight of a goose. In the delicatessen stores of Belgium, France, Germany, England, and some of the larger cities of America larded goose livers are sold as tit-bits. Some of these weigh as high as 1¼ pounds.

THE CANADIAN BANK OF COMMERCE

SIR EDMUND WALKER, C.V.O., LL.D., D.C.L., President

ALEXANDER LAIRD, General Manager. JOHN AIRD, Asst. General Manager.

Paid-Up Capital, $15,000,000. Reserve Fund, $13,500,000.

Farmers' Business

The Canadian Bank of Commerce extends to Farmers every facility for the transaction of their banking business, including the discount and collection of sales notes. Blank sales notes are supplied free of charge on application.

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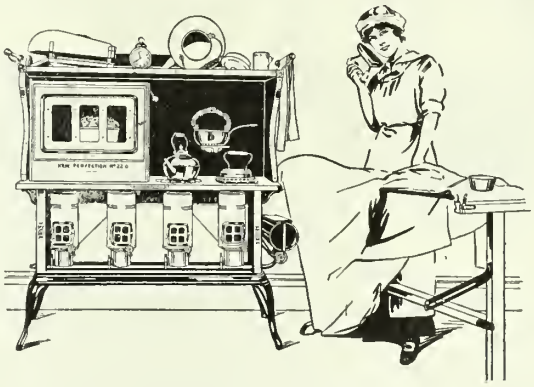
Issued by the Canadian Bank of Commerce, enable the traveler to provide himself with funds without delay, at each point of his journey, in a convenient, yet inexpensive manner. They are issued payable in every country in the world, in denominations of

$10, $20, $50, $100,

with the exact equivalent in the moneys of the principal countries stated on the face of each cheque. They are economical, absolutely safe, self-identifying, and easily negotiated.

A COOL KITCHEN



A cool kitchen on ironing day is possible with a

New Perfection
WICK BLUE FLAME
Oil Cook-stove

The heat is all in the burner—none in the room.

The New Perfection is cheaper than coal—and cooks better. Broils, bakes, roasts, toasts.

In 1, 2, 3 and 4 burner sizes. Ask to see the 1914 model 4 burner, cabinet range with fireless cooking oven. At all hardware and general stores.

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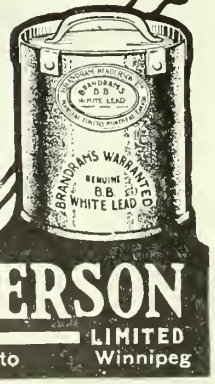
"And remember, John
use nothing but
Brandram's B.B. Genuine White Lead
on that job."

Brandram's B. B. Genuine White Lead is the one safe white lead to use because it is corroded by the famous Brandram process, which makes it penetrate further into the wood on account of its wonderful smoothness and fineness. It can be depended upon to protect the wood longer against deterioration than lead made by any other process.

Brandram's B. B. Genuine White Lead has for over 100 years been accepted as the standard of values in white lead. If the world's verdict of superior quality is good enough for you, buy Brandram's.

Write for booklet, or ask your dealer.



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Is your range a heavy eater?

When buying a range, consider not only the first cost but the future expenses.
Ranges may have a fine finish and be low-priced, but how about fuel consumption? When you buy a

SUPREME RANGE

you get a range that IS a fuel economizer. Absolutely guaranteed to cut ordinary coal bills in half.

The "SUPREME" gives greater home comfort, is an excellent cooker and baker, and continually saves your money.
There's a dealer in your town; he will be glad to show you.

Write us for Booklet "S." It contains some eye-opening facts and shows the many handsome designs.

Supreme Heating Co., Welland, Ont., Can.

Land O'Gold

Continued from Page 18.

the boy who hasn't the ability to conduct the business in a business-like way had better get out. He can bury himself in a civil service job maybe and earn his bread and butter more easily.

Now, don't think there weren't rich men in our community. Here and there one had made good. I took great care to study these fellows, and I sifted their success right down to good management every time. They had the ability to swing in from the beaten trail, while the sheep filed by.

I wondered why it should be so. Some writers argued that our farmers had lost something that was possessed by the early pioneers; they hadn't the thrift or the spirit of their fathers.

I did not believe this. Rather I thought the problem had arisen because they were exactly like their fathers. They came of a staunch, true race that had conquered the forest and subdued the roughness of the land. In those days the early fathers were self-sufficing. They were their own manufacturers and artisans. That was before the centralization of capital.

New days are upon us now. We have reached the era of commercial agriculture. Farmers must produce not what they require for their own use, but commodities to sell. And this business must be carried on as are all businesses. There must be a profit upon everything produced. If the marginal profit falls low, the farmer and his family have to hustle all the harder to make a living.

Now our people had become accustomed to the practice, but not to the theory of the thing. The theory they lived by still was that of the old pioneers. You just couldn't convince some of them that it paid to take the time to keep books or to definitely figure the profit or loss of everything done or raised upon the farm.

Then there was another reason. Habit is a wonderful force. Let a man shovel dirt in a certain manner for a long time and it will take an effort of his brain to dit it in any other way. The ones who had become accustomed to working in a certain manner simply wouldn't exert the necessary will power to do it differently. At least that is the best explanation I can give, for some of them are back there yet, despite all example, living in exactly the same old way.

WHERE ARE THE THINKERS.

Nor does this rule apply to farmers only. It is world-wide. Consider how many of the little men underneath ever study! Why, in Ottawa I telephoned to the three different offices of one express company to secure some information an office boy should have known. Yet only one man of the entire staff could tell me. They had not studied management. They never had understudied the man above. I dare say those fellows are, every one, holding down a dollar and a half job yet.

That was the reason I didn't do anything before my father's death. I had

never looked underneath. I had never made myself so valuable that my employers couldn't afford to lose me. In short, I had only worked for what I got, and so I never had gotten anything more.

I am sad now when I see many young men leave the farm, for I know they will never make good anywhere. They haven't grasped the great principle that they must work for more than they receive to make progress, but that they must work with their heads to be able to do so.

And the boy who can work with his head need never be afraid to farm. The difficulties that he leaves to avoid must be overcome anyway in some other form in every business or profession on the face of the earth.

I am amused to hear all this argument nowadays regarding the boy and the calf. The boy who must be given a calf to keep him on the farm will never stay for that. He sees his father raising calves and the more he raises the more work there is. Meanwhile the mortgage is not being paid off.

If a father wishes to keep a boy home, let him show him how to make 15 per cent. on the capital and labor invested in that calf. At the same time, let him take enough of the profit to give the boy a comfortable, convenient home and a good time. I venture that that lad won't be in a hurry to go unless he has a natural bent and fondness for some other work. Then it would be a crime to make him stay.

How, then, could conditions be improved? Some clamored for education. Yes! we needed that. The schoolhouse Bill Mason had gone to and that I had attended was near by.

"Why, I kin remember when we hardly had room in there," narrated Bill. "Old Dan McLeod used to teach us then. Every seat was filled, and in the winter the young kids sat along the platform by Old Dan."

Even so! That fall I visited the schoolhouse. There was a flutter of excitement, for they thought I had come to visit the young lady teacher. Besides, a visitor was a novelty. No one ever seemed to consider it worth while to see how the courses were conducted. I found half the seats vacant. Worse still, I noticed that practically all the elder pupils were girls.

Now, where had all those children gone whom Bill Mason had told me of; and where were the young boys?

THAT SUNDAY AT CHURCH.

That Sunday I glanced around the church and read the same story. There were many middle-aged and old men, and there were young ladies in abundance. There were also several young men, but they were for the most part English lads, working for the farmers. Except Jake and myself, there was not one of the chums I had played with in that school. Like Job's herdsmen, I could almost say, "And I only am left alone to tell it."

Had our education driven us away or had it been our home conditions, or the farm, or was it the result of all work-

Some men, sometimes, can board the flying street car or "monkey with the buzz-saw" in a mill or factory, and get away with it. But that's how accidents happen. —— Some men, sometimes, can shave with an open blade razor and avoid cutting themselves. But thousands agree that the chances are against it.

THE

Gillette Safety Razor

was the practical forerunner of to-day's "Safety First" movement. What engineers are doing now to safeguard tools and transportation, King C. Gillette did ten years ago for that much-used tool, the razor. And while he made the razor safe, he also made it keener, harder and handier than the old open blade.

That thin, electrically tempered blade, gripped rigid in the adjustable holder, gives the cleanest, smoothest and quickest, as well as the safest shave man has ever enjoyed.

Standard Sets cost $5.00—Pocket Editions $5.00 to $6.00—Combination Sets $6.50 up. :: At Hardware Dealers', Druggists' and Jewelers'

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LIMITED
Office and Factory: The New Gillette Building
MONTREAL

"Ross Cadet Rifle"

The Ross .22 is a Bull's-eye Tickler

Boys and men who want a .22 calibre rifle which is safe, speedy and accurate should buy the new Ross Cadet Rifle. The barrel has the same care bestowed on it as the other Ross Military Models which are famous the world over. The sights are of a novel adjustable peep and globe style, quite equal to many sold at from $5.00 to $10.00.

This rifle is a great one for camp and trail and good enough for any man or boy unless very large game is being hunted.

The Price is only $12.00

If your dealer cannot show one, write direct for illustrated catalogue—sent free.

ROSS RIFLE CO. - - - QUEBEC

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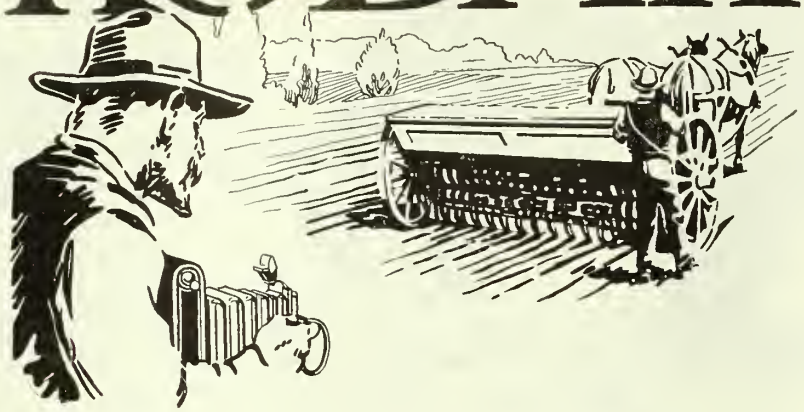

Keep an accurate record

of your farming operations and illustrate that record with Kodak pictures. An album of Kodak pictures, with explanatory notes on methods of tillage, drainage, fencing, building, breeding and the like will make a valuable reference work that will help you plan for the year to come. Experience is the best teacher—but you need records of such experience. Let the Kodak help.

Ask your dealer to show the Brownie Cameras, $1.00 to $12.00, *or Kodaks from* $7.00 *up. Catalogue free at the dealers, or by mail.*

CANADIAN KODAK CO. LIMITED
596 KING STREET WEST, TORONTO

First Principles of Soil Fertility

By ALBERT VIVIAN

There is no subject of more vital importance to the farmer than that of the best method of maintaining the fertility of the soil. The very evident decrease in the fertility of those soils which have been under cultivation for a number of years, combined with the increased competition and the advanced price of labor, have convinced the intelligent farmer that the agriculture of the future must be based upon more rational practices than those which have been followed in the past. Professor Vivian's experience as a teacher in the short winter courses has admirably fitted him to present this matter in a popular style. In this little book he has given the gist of the subject in plain language, practically devoid of technical and scientific terms. It is pre-eminently a "First Book" and will be found especially valuable to those who desire an introduction to the subject, and who intend to do subsequent reading. Illustrated. 5 x 7 inches. 265 pages. Cloth. Net, $1.

The MacLean Publishing Co., 143-149 University Ave., Toronto

ing together? Well, probably a combination of the influences had been responsible. Would a new education change the situation then? It might in the next generation, but how could it be secured unless those of the present age agreed to it? I knew how bitterly many were opposed to book-farming, as they called it. Would they ever agree that it should be taught to their children? Clearly the men around me had to be reached first.

And all the popular remedies sifted down to about the same foundation. Co-operation? Yes, it worked wonders, but unless a need was felt why should men co-operate? The agricultural college? It was doing its work. It sent out its disciples every year. But, all told, there are only about 450 students enrolled there even in these days. How long will it take this leaven to work among the hundreds of thousands in rural Ontario?

There, again, the matter sifted right down to the people. They had to be reached before the college could really get to them. The fellow who came back to the land from the college had a hard fight against difficulties. In the first place, the old folks often had too little sympathy with him. He had to fight all the time to change the old system of things. Then in the second place all his neighbors were only too anxious to find loopholes through which to expose his weaknesses. This was natural enough, too, because the boy had grown up with the neignbors, had been one of them, in short, and they regarded his change of attitude as a bolt from old traditions.

But the boy himself had faults, usually. He was green. Every graduate from every college is that. He required considerable curing. He should have been content at first to have made the best possible use of the things at hand. But he wished to secure the best possible that existed. In other words, he wanted to begin right at the top. When he went back home and found that success was usually a thing of years he was apt to become discouraged.

These influences tend to drive graduates away from the farm. Indeed an exceedingly small proportion of fourth year men ever go back. Many undertake professional or commercial work and many secure positions with the Government. Some make good and become famous, while more do not. A number of the men, no doubt, would do well to return to the land, but others are wise in choosing work for which they are more adapted. I am not quarreling with the boys for leaving the country—I was forced back by circumstances myself, you know. I just wish to indicate the line of reasoning that finally led me to the conclusion that the Ontario Agricultural College would not very perceptibly improve conditions in our country in the near future.

THE EXPERIMENTAL FARMS.

"That ain't farmin' at all," says Bill "It's all right fur them fellers to make a spread. So cud I with the Government behind me. Think what a holy show they'd make down here."

Perhaps Bill was right about the show

"I've got it," said I, one day. "I know what's wrong. All they need is a leader. These fellows won't be shown by outsiders. Maybe I wouldn't be either. They've got to be shown right on their own land and by one of themselves. They've got the Viking blood in them—every man of them. Some may be too old to learn, but most of them aren't. And there's room here for a leader—a powerful, big leader. I believe I've found the key at last."

That night I gazed a long time at the stars. I always have loved them. They're soft and quiet and strong. They are never fierce like the sun nor mellow like the moon. They're just serene and clear and beautiful, like angel's eyes. And I felt something rise up in my breast. It was a sort of dynamic force moving within me. I like to think that it was the spirit of my dear old Daddy falling upon me; for I was doing his work now.

And that night for the first time I allowed myself to soberly consider my chances of winning Grace.

To Be Continued.

The Farmer on the Platform

Continued from Page 32.

A farmer candidate should show himself broadminded above the average; good-natured, tolerant; simple and clear in his reasoning, and absolutely honest. Honesty is the farmer's strong point. The other man is so smooth, so plausible, so skilful to trim his sails to every wind, that his very cleverness makes one doubt his sincerity. Make the most of this advantage. Even if your opinions don't just seem to suit your hearers, take your courage in both hands and speak the truth as you understand it. You have done your best to prepare the ground with friendly words; now put in good seed, and you may reasonably expect to reap a harvest when it has had time to mature. Truth is the only seed worth sowing when you come to speak.

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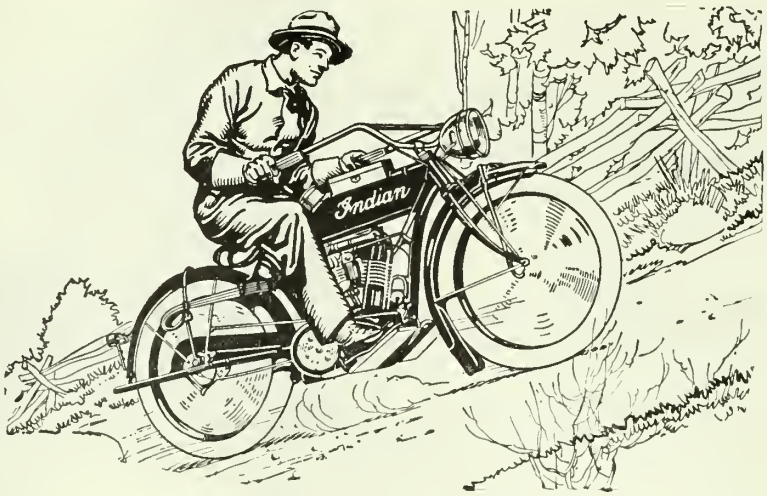

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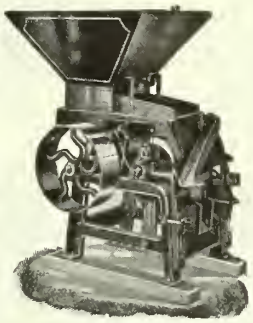

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Pasturing Work Horses

A Practical Man Writes Some Facts About an Old Subject

By W. H. UNDERWOOD

There is no doubt a great loss of efficiency by the drivers of teams through ignorance of their management. In order to get the best results from a work horse, his physical system must be thoroughly understood, and this writer who has several teams of well-kept farm horses writes from what he knows. Expressions of opinion on farm topics such as this will be specially welcomed by Grasmere in his monthly chat.

THOSE who turn their work horses out to pasture at night and on Sunday greatly outnumber those who think that a steady diet of dry feed is the only one suitable for work animals as long as hard, steady work is demanded six days in the week. Whether or not the practice of pasturing is profitable in all cases cannot be determined unless all the local conditions are known. It may be profitable for one farmer to pasture his work horses, while it may not pay a neighboring farmer to do so. Something always depends upon the way the pasturing is done as well as upon the character of the work the animals are required to perform. Nothing but good results can come from the practice of pasturing when the pasturing is done rationally and when the animals are worked rationally.

There is quite a prevalent belief that horses doing severe work will be soft if allowed grass. In my experience, however, I do not find this to be the case so long as the work performed by the animals is not out of the ordinary. Under all ordinary circumstances horses can do their regular work fully as well, and often a great deal better, on grass than when kept stabled all the time during their leisure hours, the only condition being that the pasture grass must not be depended upon too much. The team shown in the accompanying picture is one of six, all similar in many respects, the twelve head being permitted to graze when not at work, and as to strength and durability I believe better horses would not be easy to find. But in addition to the grass, they receive their regular ration of dry feed. I am aware of the fact that some farmers depend almost entirely upon the pasture grasses to sustain their work horses, but, needless to say, the animals do not render good service under this management. For best results a ration of grain must be given at all times. Even when some of my horses are idle for days at a time I get them up morning and evening and give them a feed of grain and a small quantity of well-cured hay. I have found that it pays well to do so.

The fact cannot be denied that the horse that fills himself up with grass will sweat more freely than the animal that is given dry feed only, but this does the animal no harm. In fact, I like for my horses to perspire freely. The horse that sweats freely is the one that is the least tired when night comes. Good grass is the natural food and medicine for the horse. It is easily digested, and so it regulates the workings of the stomach. Not only does it induce free perspiration, thus opening up all the pores of the skin to eliminate dangerous substances, but it also causes a free and natural evacuation of the bowels and hushes the kidneys, so that those organs are also active.

A good pasture will prove of especial benefit to the horse that is in a run-down condition so that he cannot stand the work well, that does not perspire

freely, or that refuses to shed old hair at the proper time. Regular pasturing and working moderately will speedily bring such an animal back into good condition, provided he receives a suitable ration of dry feed and is well cared for in other respects.

If the horses are pastured at all, they should be turned out fairly regularly. The animal that has been kept on dry feed all week will consume a greater quantity of grass that is good for him if the grass is luxuriant and the horse is allowed his liberty all day Sunday. When horses must work all week on dry feed and permitted to graze only on Sunday, half a day's run in the pasture will prove most beneficial; then they should be gotten up in time for their evening ration.

It seldom pays to pasture work horses at night when the pasture is poor. A horse that does a hard day's work in the field should have a reasonable amount of rest at night and not be compelled to work extra for his board. If the grass is poor he will pick away at it all night and not get the rest that is so necessary. But if the pasture is good he will soon get enough to satisfy his wants and he will then lie down for a good night's rest. He will rest far better than is possible in a stable, and the grass he eats will do him good.

A run in the grass is Nature's way for the horses to have their liberty. A good roll in the grass is always better than any grooming. After a horse has worked all day and comes in from the field tired and covered with perspiration it does him much good to go into the pasture, where he can eat grass and rest comfortably. This is especially true during warm, sultry weather.

Many farm stables are poorly ventilated, and the horses that must remain all night in the hot stalls will sweat profusely during the forepart of the night. Toward morning, as the air becomes cooler, the sweat will cool, and the animals, which are already exhausted from the effects of much sweating, become chilled and are stiff and sore the next day. But if they spend the night in the pasture, when brought in the following morning they feel refreshed and ready for the heat and toil of the day. If it so happens that some of the horses must be kept housed in a hot, uncomfortable stable at night, a great contrast can be noted between their actions and the actions of those animals which have spent the night in the cool, green pasture field.

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Spanish Gold

Continued from Page 28.

you told him the kind of thing you wanted. Or if there's no good man in your neighborhood try one of those soothing syrup stuffs you'll see advertised in Christmas numbers. I dare say they're all right. I hesitate as a rule about recommending patent medicines, but you can see for yourself that your friend wants something."

"What the devil brings you here?" said Sir Giles. "I told you to wait at the top for me. Who's going to haul us up now, I'd like to know?"

Langton, still nursing his knee, sat in sulky silence. Meldon looked up at the hole above his head. Peering over the edge of it was the benevolent and aristocratic face of Thomas O'Flaherty Pat. His long white beard drooped down. His white hair completed a kind of moonlight aureole round his head. His face expressed a mild and entirely courteous interest in the doings of the men below him.

"It's all right," said Meldon to Sir Giles. "There's a dear old fellow up there, a great friend of mine, who'll do what he can to pull you up, I'm sure. He's not very strong, and he may not be able to haul you quite the whole way, but he'll do his best. And you're taking risks in any case. I see you're using the throat halyard of my boat again in spite of the warning I gave you the day before yesterday. If I were you I'd make Langton lie down flat underneath you as you go up. He'd break your fall a good deal in case——"

"Come out of this," said Sir Giles, taking the rope from Langton and fitting it round his own armpits. "I'll go mad if I have to stand here any longer listening to that ape gibbering. Hi! you above there! Haul up!"

I forgot to mention," said Meldon, "that the old gentleman doesn't understand a word of English. My friend Higginbotham, who has important business to transact with him, is learning Irish on purpose to be able to carry on the necessary conversations."

Sir Giles plucked furiously at the rope and shouted again.

"There's no use trying to make him understand by shouting," said Meldon, "he's not the least deaf. The best thing you can do is to wait here quietly till the Major and I get away in our punt and back to the far side of the island. It'll only take us about two hours. You and Langton can talk things over together while you're waiting. I'll send up a little girl called Mary Kate, who understands both languages. You can tell her what you want and she will explain it to her grandfather. But I do ask you to remember, Sir Giles, that she's a little girl. I don't want to rub it in about your language, but there are some things that a girl of ten years old—you know what I mean."

Sir Giles stooped and took up a large stone in both hands.

"If you utter another word," he said, "I'll bash in your skull with this."

"If you'd keep calm," said Meldon, "you'd run much less chance of bursting a blood-vessel. You ought to be able to realize that I'm giving you sound advice and speaking for you own good."

Sir Giles raised his two hands above his head with the stone between them. He held it there, poised for several seconds, taking aim at Meldon. The rope round his armpits tightened suddenly. He was lifted from his feet. He dangled in mid-air, hands and feet hanging down. When he was about eight feet above the ground he ceased to ascend. He writhed and wriggled, with the result that he began to spin rapidly round and round at the end of the rope.

"If I were you," said Meldon, "I'd drop that stone. It adds considerably to your weight. I told you before that old Thomas O'Flaherty Pat is anything but a strong man. I'm sure he's doing his best, but it looks to me as if he was pretty nearly played out. It's trying him too high to make him hoist both you and the stone at once. I'll send it up to you afterwards if you really want it. But I can't see what use it will be to you. There are plenty of stones up above. The island is simply covered with stones, every bit as good as that one.

The ascent commenced again and continued jerkily vith many pauses, until at last Sir Giles disappeared through the hole.

"I think," said Meldon to the Major, "that you and I may as well be dodging off home now. Good-bye, Mr. Langton. We can't be of any further use to you. Sir Giles will pull you up all right. If I were you I wouldn't be in too great a hurry to go. His temper won't be by any means improved by the argument he'll have with Thomas O'Flaherty Pat. You can't imagine how trying it is to argue with a man who can't understand a word you say and can't speak so as you can understand him. That old fellow has just one sentence, something about 'Ni beurla.' He says it over and over again in a way that would get on the nerves of a cow. It takes a cool man to stand it. Higginbotham gets quite mad, and even I have to keep a tight grip on my temper. The effect on Sir Giles will be frightful. And he has that stone with him. He would insist on clinging to it. Good-bye, Mr. Langton."

Meldon and Major Kent went down the cave together. The tide had completely ebbed, and it was possible to crawl through the entrance without getting wet. The punt, which lay high and dry, was carried down to the water and launched. Meldon, as usual, took the paddles.

"One thing," he said, thoughtfully, "seems perfectly clear. Sir Giles hasn't got the treasure. If he had he wouldn't have got into such a beastly temper."

"That coup of yours about the punt didn't precisely come off," said the Major with a grin. "He rather had you over that, I thought."

Meldon ignored the taunt.

"The question now is," he said, "who

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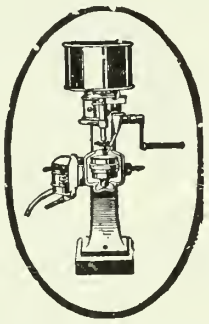

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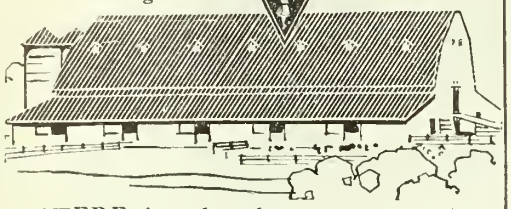

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has the treasure? The position seems to me to require some thinking out. It is becoming complex. I'm glad we have a long, quiet afternoon before us."

They reached the shelf of rock, disembarked, and folded up the punt.

"I wish," said Meldon, "that you hadn't insisted on my finishing off those two sardines this morning. I'm very hungry now."

"You'll get nothing more to eat till you get back to the Spindrift, unless you happen to come across that crab which you lost the first day we were here."

"I wouldn't eat a raw crab any way. I'm not a cannibal. Come on and let us get back as quick as we can."

The disappointment of the morning and the sharp appetite which followed hard work in the open air affected even Meldon's temper. He spoke no more for some time, but scrambled doggedly along, only a few yards ahead of Major Kent. Gradually the extreme interest of the treasure hunt took possession of his mind again and restored his cheerful self-confidence.

"You'll admit now," he said, "that I reasoned perfectly correctly about that treasure. The Spanish captain hid it precisely where I said he did."

"There was only one point you went wrong about," said the Major. "You said the treasure was in that cave and it wasn't."

"It was, originally. I couldn't be expected to foresee that some one would remove it and hide it again in another place. That's what has happened. Now that I know it's gone, I'll turn to and reason out where it's gone to. If it hasn't got any rightful owner we'll get it yet."

"What do you mean by a rightful owner?"

"A live man," said Meldon. "If it was removed and hidden by some fellow that's dead and gone, then he's no more the owner of it now than the Spanish captain is. If there is a rightful owner, of course, we're done. I'm not going to commit robbery even for the sake of getting that treasure."

"I'm glad to hear that, anyway."

"Now, there are just two people at present alive who can possibly have that treasure. One is Higginbotham. The other is Thomas O'Flaherty Pat. I'll take Higginbotham first."

"What's the good of that? If Higginbotham has it he will keep it."

"Still it would be interesting to know. In favor of Higginbotham it may be urged that he has evidently made a very careful investigation of this island. You see how glibly he came out with that information about the pliocene clay. Now would he have known that if he hadn't, so to speak, got at the inside of the island? That sort of clay doesn't lie about on the surface for everybody to see."

"Why shouldn't it?"

"Oh, just because those fundamental things never do lie on the surface. A fellow wouldn't find out what your backbone consisted of by just looking at your skin, would be? He'd have to put you on an operating table and cut a hole in you to find that out. It's just

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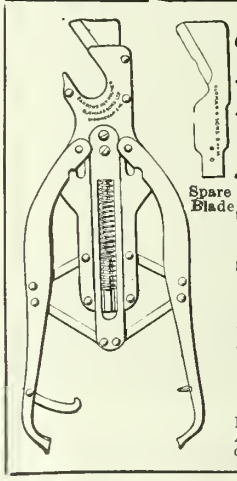

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the same with islands. Higginbotham knew that this island consisted of pliocene clay. Very well, it follows that he must have gone beyond the surface of the island."

"Prompted, I suppose, by an unholy curiosity."

"Prompted by a stern sense of duty. He is employed by the Government at an enormous salary, no doubt, to find out all he can about this island. Naturally he either digs a hole or goes down some hole already in existence. Now, so far as we know, Thomas O'Flaherty's hole is the only one there is. Therefore it seems likely that Higginbotham went down it. If he did he found the treasure and has it now."

"It's all the same to us who has it. As I said before, if Higginbotham has it, he'll keep it."

"I didn't say Higginbotham had it. So far I've only considered what is to be said in favor of what I may call the Higginbotham hypothesis."

"Don't start on hypotheses again, J.J. I'm sick of the sound of the word."

"I can't help it if you are. The proposal of an hypothesis is the only known method of finding out truth. I tell you. Major, I've gone pretty deep into these philosophic and scientific questions, and I know what I'm talking about. You ask any first-rate man and he'll tell you the same thing. Now, against Higginbotham there's just one broad fact to be urged, but I candidly confess it seems to me to be decisive. Higginbotham isn't the kind of man who would come upon hidden treasure even by accident. He has too much of the official mind. It's almost impossible to think of a Congested Districts Board official gloating over Spanish gold. That puts Higginbotham out of court. There remains Thomas O'Flaherty Pat. You'll recollect that I've always had my suspicions of that old man. The way he followed us the first day we went round the cliffs was peculiar, to say the least of it. His persistent refusal to speak a word of English points to the fact that he has something or other to conceal. I shall have to go into his case very carefully indeed. But here we are at the foot of the path. I can't climb up a cliff with a punt on my back and talk at the same time. I'll have to put off discussing old O'Flaherty till we get to the top."

After a quarter of an hour's hard work Meldon reached the head of the path, drew a long breath, and took a look at the bay below him. Then he laid down the punt hurriedly and turned to the Major, who was still struggling upwards.

"There's another yacht in the bay," he said—"a big steam yacht."

Major Kent hurried over the last few steps of the climb.

"You're right," he said. "There is. If I'd known that this was to be a kind of Cowes week at Inishgowlan I wouldn't have come near the place. I suppose the next thing will be some fellow coming round and asking us to act on the committee of a regatta."

"That's a biggish boat," said Meldon. "The man who owns her must be pretty

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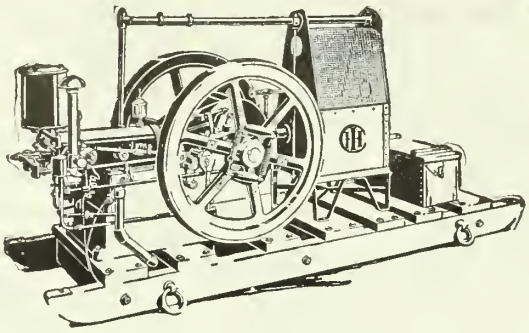

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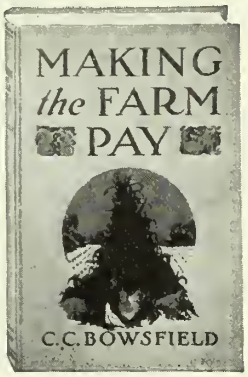

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wealthy. Now what has he come here for?"

"Treasure-hunting, of course," said the Major. 'Nobody comes here for anything else."

"Don't jump at conclusions in that way. There's nothing so unphilosophic as forming conclusions on insufficient evidence, and in this case you simply haven't any evidence at all."

"It wasn't a conclusion," said the Major. "It was an hypothesis. Of course if you've any better hypothesis to offer——"

"I have. I believe, in fact I'm practically certain, that the men on that yacht are Members of Parliament."

"You said that about Sir Giles and you turned out to be wrong."

"That's just what makes me so sure I'm right now. I'll explain it to you in one minute. You've sometimes played pitch-and-toss, I suppose—I mean as a boy."

"I have."

"Very well. Now suppose the other fellow tossed the penny. You called heads and it turned out that you were wrong. You'd be practically certain it was tails, wouldn't you? There you are, then. I was wrong about Sir Giles being a Member of Parliament, therefore I'm nearly sure to be right when I say that this man is."

"I don't see that. Not that it's any use arguing with you."

"If you don't see a simple thing like that, it isn't any use."

"All the same I will," said the Major. "Just for once I'll show you what rot you talk. You said it must be either heads or tails."

"I didn't. I said it was nearly sure to be either heads or tails. The penny might light in a mud heap and stand on its edge."

"It's no use reasoning with you."

"It isn't," said Meldon, "if you won't reason right."

"Look here. You say if it isn't heads it's nearly sure to be tails. But suppose he tossed another coin. That's what's happened in this case."

"It's just the same with any coin. There are only two sides to the best of them."

"What I mean is this. Here's a fresh yacht altogether. Quite a different yacht from the Aureole with quite different people in her. It isn't a case of heads or tails at all."

"I don't in the least see what you mean, and I don't believe you see yourself. But you may take my word for it, Major, that there is at least one Member of Parliament in that yacht. There may be more, but I'll bet my hat there's one. Don't bother your head any more about that. These things only make you irritable. We'll get along back to the Spindrift and have a bite to eat. Then I'll take a long, quiet afternoon thinking things out. If I get them sized up to my satisfaction I may go on shore before tea and have a look at Michael Pat. In the evening I'll find out how Higginbotham got on with the tuberculosis bacilli on Inishmore."

To Be Continued.

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Continued from Page 37.

pushed somewhere, and he heard a babel of noises, knew that he waved his hand to them and that his face was wet.

Dimitri had started upon his journey. Then came terrors to beset him day and night. Suppose he should miss some important part of Andre's instructions! Suppose the boat at Hamburg was full and there was no room for him! Suppose a thousand torturing things which had been known to happen. The great seaport nearly made a coward of him. The hurry, confusion, lack of interest in him and his affairs maddened him. No one had time to explain minute things to Dimitri Solenski; he was only an immigrant going to Canada. Hustle him on the liner, down in the steerage with some five hundred human beings who for the time must herd together like so many animals.

He was on his way to Montreal. But relief quickly gave way before a dread of his strange quarters followed by the most horrible of human ills—seasickness. For days, he lay limply in his bunk fearing death would snatch him from his purpose, and later as his illness increased with the fury of the seas, he prayed that release might come quickly, in no matter what form. Dimitri had never been ill in his life, except once years before when he had a bad throat. He remembered, lying in the dimness of the dungeon into which he and his fellows had been battened down, the tender ministrations of his mother and even little Anna, their solicitations for his comfort, their anxiety for his recovery, their joy in his wolfish appetite when the pain grew less. He realized that the satisfying of his appetite must have caused a noticeable stringency in the larder, although the thought had never occurred to him until the moment of separation from his loved ones. Fancy mother and Anna denying themselves food for him!

He rolled over upon his face and lay in an agony of home-sickness for he knew not how long.

Then, after what seemed years of horror, someone told him that land was sighted; simultaneously, his courage rose, and the waves heaved less. The vessel steadied herself and nosed her way into port.

Dimitri's abortive struggles with English had been crushed during the voyage and he faced the New World with but one intelligible word to his credit—Montreal.

Andre Herlebuc was miles away, in Northern Ontario, so his letter said, and could not, naturally, meet the boat. Neither could he afford to send money for Dimitri to make the trip to his quarters. But he explained with a fair amount of lucidity that after passing quarantine, Customs and immigration officials, Dimitri would be sent to some post to work, at not less than "two dollars a day."

It all came true. The ship creaked and strained at her moorings as though impatient to be off again, as though she said:

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The young Polack was not handled with especial gentleness as he was herded on a train with several fellow-passengers, but he was too glad to be free from the sea to mind, much. Still dizzy and weak he found the badgering of the officials trying and confusing. They all seemed to have very red faces and very loud voices. He was docile, however, blaming himself almost as much as he blamed them, for he realized that ignorance of English was to be a serious handicap. "Toronto" was an acquisition, though, gathered from one of the travelers, and it turned out to be another swarming mass of humanity like Hamburg and Montreal. It also proved to be a place of bad luck for it was there that Feodor's letter disappeared. A link between home and himself seemed to have snapped when Dimitri discovered his loss. He was thankful, however, that the instructions had been carried out thus far without a hitch, and according to the sanguine Andre, he had now but to put himself in the hands of an agent, who would surely find him work at not less than "two dollars a day."

It was true, also. The representative of an employment bureau met the train and explained that he must have two dollars from the men before he could put them at work. This was a blow, for Andre had not mentioned this necessity. Crestfallen, the boy held out his money in a hand which was not quite steady and allowed the stranger to take all but a few small coins. They looked as pitiful and lonely as he felt, for there is nothing like being ignorant of money values to stamp the feeling of isolation strong upon an alien. Dimitri's money had been changed in Montreal, and when the representative had taken two dollars, he had about thirty-five cents left. His companions refused to make the payment, and called him a fool, as he obediently followed "the master" away. Thus another link between him and his country was severed. He could not have imagined a place holding so many people and not one of them Polish!

He was taken to the spot which according to a crooked sign was the office of Antonio Salvatori, and with much gesticulating he was made to understand that in the afternoon, a job would be waiting for him. With a radiant face Dimitri sought out an eating establishment and filled his healthy young body with the nauseous mess given him, for three of the remaining coins Antonio had left. He ate with almost as much relish as though the hash set before him had been cabbage soup with meat in it! All his sufferings were forgotten, for thus do the gods smile upon youth and shed the radiance of hope to lighten the dimmest corners of despair. In the afternoon he would start work at not less than "two dollars a day."

He went immediately back to the office and tried to wait patiently. No one paid

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the least attention to him for a long, long time. Then the tension snapped and he approached the man who had brought him there with a halting question on his lips.

Salvatori glanced carelessly at the clock, rose and yawned. How could he know what depended on Dimitri's job?

Speaking a few words in every known language and using large sweeping gestures, the Italian thought he was explaining that another journey by train had to be undertaken before work could begin; the boss in Weldon—Weldon—he repeated it and Dimitri added that name to his slowly increasing stock, wanted men to work on construction—a good job, yes, but if he didn't like it, for two dollars more Salvatori would get him another—oh, yes! He must go to the station now, and get on the train for Weldon—Weldon—and pretty soon he would be there.

"Dees here, teeket," continued Salvatori, thrusting a slip of paper into the boy's hand. "*Das bettel*—billet—Fahrkarte—geeve to conductor. Goo'bye."

He pushed Dimitri impatiently out of the door.

Guided more by instinct than by any real information, he found his way to the station and was put on a train. The ride was short, but not wholly pleasant. Now that the end was in sight, misgivings began to assail the lad; suppose he should be given some sort of work he could not do? Suppose he were told to work with figures—horrible! Then they would not give him "two dollars a day." Andre had not said what sort of work would be given. The letter—he felt through his clothes again, in the hope of finding it, but it was gone. He looked around the car wondering if any of the men were bound for Weldon. With a thumping heart, he decided to ask.

The man nearest him looked up sharply and shook his head at Dimitri's conversational effort. Some of the others laughed. Obviously there was not a Pole among them.

"Weldon?" asked the boy, inquiringly, and looked from one to the other. Again they laughed and nodded their heads. There was one, in particular, who was always laughing. He had very red hair and freckles, and after the manner of deaf mutes, he conveyed to Dimitri the fact that he was getting off at Weldon.

And presently about seven of them were standing on a platform watching the disappearance of the train which curved like a long black pigtail on a mottled cloth.

A bluff giant met them—the timekeeper. He presented each with a blue ticket and turned them over to the foreman. After a short trip on a queer conveyance which the men propelled themselves, Dimitri was ushered into his future home, an old box car, fitted with sixteen bunks and a stove. Thanks to the kindness of freckled Dinny Flanagan, he learned that he must buy and cook his own food. The other fifteen did. At the company's store, he was given bread and salt pork, along with a book in which the clerk wrote something, under the number which tallied with that on his ticket.

He was the only alien in the car, the only man who had not some one with whom to converse in his native tongue. The majority were Italians, with a sprinkling of Irish and Scotch.

Although every bone in his strong, young body ached, he could not sleep. The bunk smelled of all sorts of evil things, and the air in the car was rank with smoke. He began to weave pictures of his home, imagining his mother sitting opposite the sacred Ikon thinking of and praying for him. He fancied gentle little Anna and the thoughtful Feodor, who had timidly regretted his leaving Poland. "I wish you were not going, brother," the lad had said, with one of his far-away looks. He saw them all waiting there, breathless for the first letter. Into this he would put five days' wages, the rest would be ample for his needs. Had not Mother and Anna denied themselves food when his throat was bad, that he might have the more?

A great wave of home-sickness swept over him and he strangled a sob by catching the flesh of his arm in his teeth.

Perhaps by saving, he could bring them out to Canada, to Weldon, in six or eight months. The thought made him almost faint. How long ago he parted from them! Visions of the old woman who had been so kind brought tears to his eyes; he must not forget them in sending presents home. He would ask Mother to buy——

A rough, but not unkind, hand shook him. It was day and the men were up and stirring, the atmosphere a composite suggestion of tobacco, frying bacon and humanity. Dimitri, fearing to be late, ate dry bread and washed it down with gulps of bitter coffee, which the Irishman gave him. He saw the men gathering food together and putting it in tin pails. He had no pail and thrust a crust of bread in his pocket, but Dinny, catching him in the act, signified by much bellowing and many slaps upon various parts of his anatomy below the belt, that he would share his pail with the foreigner, for the day, at least. So mumbling awkward thanks, the boy put some bread and meat with Dinny's dinner, and made himself responsible for the joint commissariat.

They set out in the crisp morning to a hand-car where the foreman armed them each with picks and shovels. They were on their way to work!

A shriek broke upon the still air, and interrupted Dimitri's dream pictures. Not quite understanding what was happening, he jumped from the car with the others. Then following their gaze, he saw a locomotive, a special, hurling its enormous black bulk upon them. The men leaving the car to its fate, ran still further from the scene of certain destruction, but Dimitri with a gasp made for the track and Dinny's bright new dinner pail which in his excitement he had left on the truck. The men shouted, the engineer cursed, but it was too late. There was a crash of splintering timbers, a shearing of rivets; there was a rattle of steel upon steel, and a peppered rattle as the wreckage struck the earth, some eighty feet distant.

The locomotive slowed down, and two men jumped from the cab. The con-

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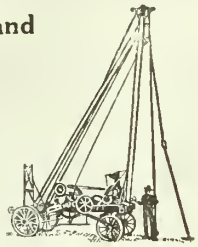

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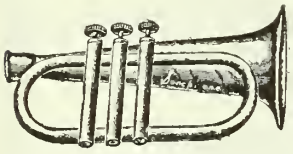

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struction crew ran back from their posts of safety, Dinny reaching the spot first.

"Who is it?" asked the engineer, turning his head away from the confused mass of wreckage.

"Only a Polack," answered Ryan, the foreman.

The d—— fool," cursed the man, again. "It wasn't my fault! We'll send on the coroner. Got to catch the Minister, at Midland. The fool!"

Black smoke marked the course of the engine long after it had disappeared from the view of a crowd of silent men, who disposed themselves along the track to wait.

The coroner's verdict was brief. "Accidental death," he said, writing in his book. "What was the man's name?"

No one knew. The foreman didn't know, and, of course, the timekeeper didn't know. He had done all that was expected of him—he had tagged the stranger with a number—723.

And 723 was buried in a nameless grave, not far from the spot upon which he met accidental death. Dinny never used that bright new pail—he gave it away to the man who replaced the young foreigner.

And in far-away Poland the townsfolk shake their heads and mumble. A cloud hangs over the little cottage at the end of an aimlessly winding street. Katrine's eyes are dim with watching; little Anna is not married and stoop-shouldered Feodor has not gone to school with gentlemen's sons. He coughs a great deal as he looks away beyond the confines of the cottage and dreams his saddened dreams. And the priest and the tax collector come as before. Yet nothing will shake the faith of the little family waiting there, waiting so patiently for that promised letter!

The Ministry of the Soil

Continued from Page 7.

ners with nature, and nature is responding. These premises demonstrate that one does not need to leave Old Ontario behind him to secure profit from the soil. Mr. Watson has not found any way of doing his work that others may not find.

BOYS FARMERS FROM CHOICE.

Nor has Mr. Watson won at the price of the liberty of his boys. At present, and all along, the boys are *farmers from choice*. The doors of the school have been held open to them. They live in the assurance that they are free to follow their bent as regards their choice of an occupation. So far, the farm has been their deliberate choice. They have won prizes as plowmen. They have availed themselves of the short course at the O.A.C. at Guelph and at Newmarket. Together with their father they have won prizes at the various agricultural fairs. In no case have they looked upon their work as drudgery. They are

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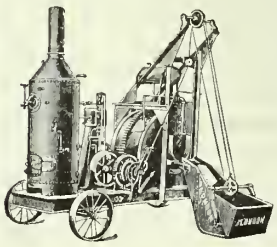

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proud of their farming and of their prize-winning, but prouder far that they are their father's trusted lieutenants in all that pertains to the activities of their farm and their home. Life is enjoyed as they go along. The fine buggy and the auto-car are not reserved for occasions of solemn state, but are regarded and used as part of the farm equipment and home comfort. Everything about the farm and the house is subordinated to purposes of living welfare. Father and sons have stood together for the conquest of their farm. They have received their full share of buffets from wind and frost and flood and blight. Success has not always crowned their efforts, but they have shared and shared alike in failure and in success. It is this good comradeship that puts iron into a son's blood. It is all very well for a boy to know that one day he will be his father's heir. It is quite another and an infinitely better thing for him to have a sense of ownership from the very day that he is old enough to assume responsibility. He likes to feel that there are some things that he owns in his own right. He likes to realize that he has a reasonable share in the policy-making of the farm as well as in its labor. In the very nature of the case farming never can be made a matter of pink teas and water-ices. At the same time, it has been demonstrated on this and on other well-ordered farms that it may be shorn of its drudgery with advantage to all concerned. The farm calls for men who welcome the bringing of their powers of mind and of body to the fighting edge. Only those who have the stuff in them to prove worthy of such a welcome need hope to rise above the merest mediocrity in a vocation upon which rests the destiny of the democracy. The farmer who from sheer merit is on the winning side of this most ancient, as it is the most fundamental, of the arts, labors in the assurance of victory.

Each time he overcomes the barriers between him and success he is filled with a new sense of mastery. It is this sense of mastery in the realm that an all-wise Creator appointed for his conquest that is one of the chief rewards of the modern agriculturalist. The man has won a prize so well worth having, and he alone knows how satisfying and how good it is. The new rural structure, social, economic, political, is rising, and they who understand its spirit best see that the home will be its centre and its wealth of young manhood and womanhood will be its bulwarks. There have been farmers who have so dominated the lives of their sons that they have come to hate the farm and all that pertains to it. Such sons will never become best citizens nor make the happiest men. At the same time, there is the more excellent way of developing interests in farm operations and farm advantages that spells success in dollars, in citizenship and character.

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FARMER'S MAGAZINE

143-149 UNIVERSITY AVENUE, TORONTO

Finding Their Level

Continued from Page 8.

of urban life. When they have seen this advantage have they been unwise in giving up the inferior for what they believed to be the better? Already not a few of them have discovered that they have been throwing away the substance for the shadow. There are signs of the times already in evidence that this lesson will soon bear fruit. Further, if older Canada has not learned the best methods of applying her agricultural resources, it must not be wondered at, for older Canada is yet young in her agricultural activities. Her experience is in the very nature of the case of a limited character as far as the care of soil is concerned. Only recently and that in no alarming degree has there been any evidence of soil depletion. But with the emergence of the necessity of soil conservation has come instruction in the ways and means of carrying on a system of farming that will yield a fair profit every year and which at the same time causes the fertility of the soil to steadily increase. All over older Canada there are farmers who are steadily demonstrating that the present difficulties of farming are not out of proportion to the opportunities for making a good living every year and providing a competency for life in its seasons and yellow leaf.

FARMERS ARE MAKING GOOD.

Looked at from any point of view, the present situation of agriculture gives no cause for pessimism. Everywhere there are farmers who are making good. Not only are there those who have added to the patrimony of their fathers, but there are hundreds who began at the very beginning and who are now climbing up the hill a little farther every year. While there is unrest it is the unrest of growth and development and the search for the place for which each man is best adapted. The mistakes of yesterday are being rectified and the conquest of new conditions is being undertaken with a courage that augurs success. Speakers at social service congresses who bewail the present decline of rural population will do well to study blue books less and farmers a great deal more. General statements are all very well, but each farm, as is each store or office, is a problem in itself and it must be so studied. In towns and cities and between towns, cities, and between occupations there is always a shifting—a movement that has in it a great deal of sterility, but which is, nevertheless, an evidence of life. From this shifting farmers are not exempt. They are free men, and as such they have the right to seek their level—even at the expense of making their own mistakes.

To be on a farm in June is one of the joy spots of Canadian out-of-doors. There is so much beauty for the eye, ear and nose. One feels it good to be alive. Every part of our big expanse of country is filled with the perfume of growing things. Up in the big Peace River country and down by the Basin of Minas, the same optimism prevails. Canada is a good replica of Canaan.

Crop reports are favorable. Fall wheat in Ontario and Alberta has not wintered first-class, but the acreage that remains is doing well. Fruit prospects in the Niagara Peninsula are not as good as we would like, yet these shortcomings may lose their sting in the harvest prices that may prevail.

Livestock generally are in splendid shape. Cattle are being put on pasture at big prices in the hope of good prices in the midsummer markets. At any rate the beef scarcity is going to keep prices up for some time and it is doubtful if we will ever again see cheap beef. Some Alberta cattle realized $9.15 on the Chicago market recently. Sheep are coming to their own, they are being sought for more every day. Sheep ranchers are talking business on the prairies, while the reorganization of the wool business in the Western States will leave a big demand here for breeding stock. Hogs are being produced in big numbers in Alberta and many carloads are coming East. The demand for them from the Pacific coast is a growing one and Eastern farmers need fear little from their competition. Prices will be good.

The outlook for farm produce is extremely bright. In a time of money stringency the farmer is in a relatively better position than anyone else. The recent setback has been a good thing for agriculture for farmers are getting down to a producing basis for values and are not dreaming of becoming millionaires through real estate speculation. That is the beginning of real prosperity, for all wealth comes primarily from the soil.

June is also a month of responsibilities. To secure a harvest, means a busy life for the cultivator.

A constant battle must be waged with weeds, insects, blights and drought. Behind the physical labor must be the calculating and directing mind of the manager.

Divide your daylight hours, allowing for recreation, prayer and rest. Don't be a slave-driver. Efficiency is not bustle and brute force. It is the net result from deliberate action.

PRUNE APPLE TREES.

June is a good month for pruning apple trees. The advantage lies in the fact that with all the foliage out, one is better able to judge the amount of wood to be left in. Edward Van Alstyne, director of the Farmers' Institutes of New York States, besides advocating early cultivation of the apple orchard and the sowing of a cover crop, claims that often too much pruning is done in one year. Regular pruning should be done so that no wound larger than a silver quarter has to be made. If some have to be made they should be painted with raw linseed oil.

SPRAYING TREES.

The second spray having been given fruit trees just before the blossoms open, a third should follow as the last blossoms fall. It may be necessary for fungous

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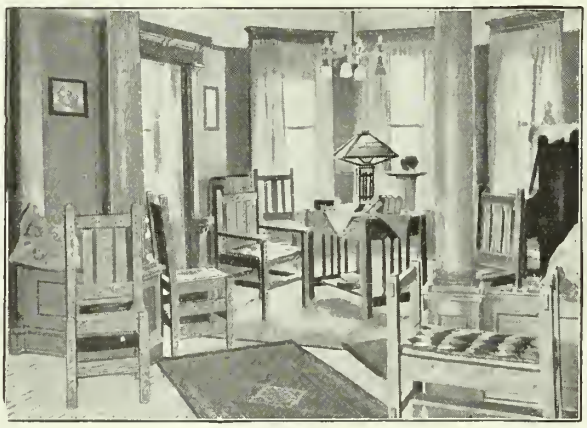

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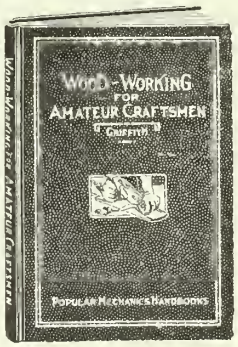

troubles to spray again at the close of the month. Be sure to use plenty of the fluid and to cover the trees well. Lime-sulphur and arsenate of lead should be used for the chewing insects.

MANGOLDS AND CARROTS.

All mangolds and carrots should have been sown before this. Now is the time for scuffling and thinning before the plants grow too spindling. Cultivation is equal to manure with them now.

FODDER FOR LATE FALL.

It is not too late to put in a piece of corn for late fall feeding. It is always well to provide for a drought.

Rape sown this month in drills will make good feed for the lambs and cattle.

FOR THE POTATOES.

Keep the scuffler and cultivator going every week in the potato patch. It will encourage a good root system and prepare them for the heat of July and August. Spray for bugs where they are likely to be bad. Nothing beats the Paris green for this.

TURNIPS SOWING.

June the 20th is not too late for sowing Swede turnips. Many a farmer in the former days reaped big crops from this seeding. Get the ground into fine seed bed shape before sowing and so save much hoeing. Salt sowed broadcast on this land previous to ridging is a good policy. White turnips can be planted later.

CULTIVATE CORN.

Corn is the feeder's and dairyman's standby. A good crop must be had at all odds. Cultivation in June goes a long way toward assuring this result. The big three-horse cultivators that clean two rows at once will pay well. The hoe will have to be used some in dirty soil with cob corn, but with careful planting the horse implements can do the most of it.

HAYING.

The first hay is cut this month. All alfalfas and red clover will be ready for the mower. Read Glendenning's article in the May FARMER'S for methods. Cut alfalfa from about the middle to the 25th of June. Examine the roots and as soon as the fresh shoots appear at the crown cut at once. In curing alfalfa, aim to retain the leaves as far as possible by turning frequently and getting it in without much weathering. In case of rain move the cocks after a two days' stand to prevent killing the plants under the cocks.

By all means do not leave red clover until it is nearly ripe. It is poor feed then. Cut too early rather than too late.

TILE DRAINING.

Most of the provinces have enjoyed good weather this year so far. Yet many places yet suffer from surplus water. Those fields where the rain will not leave in twenty-four hours should be drained at once, although all fields are better with good drainage. The county representative will be glad to assist you in charting

some fields and advising as to the size of tile to use. Now that ditching machines and their repairs are on the free list more of them should be invested in by local parties who could do a flourishing draining business in almost every vicinity. It is well to plow light furrows in the grain fields to assist in the drainage after a big downpour.

PAINTING THE BUILDINGS.

City people use paint freely every spring. Farmers too often neglect it. Many old houses and barns carry a woebegone appearance. A little paint has a wonderful effect on crops and prices. Many a man has sold his farm for $1,000 more by reason of the use of $50 worth of paint.

BEAN PLANTING.

The good prices for beans has reduced liberal plantings in Southern Ontario of late years. Yet the demand for them has exceeded the supply. They may be planted during the early part of the month, by an ordinary grain drill. The land should be thoroughly cultivated previously.

FENCE BUILDING.

Generally it is the backwoods farmer who has the most trouble over line fences. The up-to-date hustling farmer, has no time to quarrel or make any unpleasantness. Good farmers are reasonable men. Yet it is best to be safe and have your fences repaired at the slack seasons of this month. Woven wire is the best fence material. Set the anchor posts well and trim the tops to look well. Get good gates and paint them.

GET A FARM NAME.

Have you done anything about naming your farm yet? A short time ago we wrote to the Dominion Department of Agriculture asking if they had the machinery for registering a farm name, so that the owner of the farm would be protected in his name. Their reply was that they had no such machinery. This is one way they can make a good move and if readers will write the Minister asking for such a possibility, it is likely something will be done. Progressive farmers use letter-heads with the name of their farm and its product upon it.

LIVESTOCK ON PASTURE.

Cattle, sheep, and horses that are on pasture this month need little attention beyond watchfulness and salt. Rock salt in a box in the pasture should be accessible at all times.

Cattle have been put out on grass in the East and in Alberta in large numbers this season, yet the high prices and the United States demands have prevented more going out. The outlook for good prices all through the year is good, as beef is scarce. News of big sheep ranches in Alberta, and cattle-breeding farms being established, shows that this province believes in its future.

IN THE DAIRY BARNS.

What about the cleaning and the whitewashing of the dairy barns if it is not already done? Off days and rainy days

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Our Motto is: "Built to wear, not how cheap, but how good"

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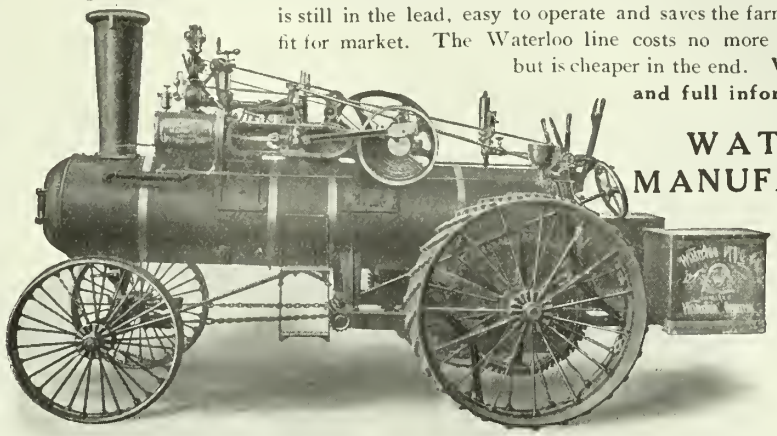
The Waterloo Threshing line has been used for many years and are used by the best threshermen and farmers. Our engines are in design a beauty, strong in belt and powerful on the road, easy to operate and light on fuel and water. The Champion Separator has outlived all other makes of machines and is still in the lead, easy to operate and saves the farmer's grain, and cleans fit for market. The Waterloo line costs no more than other machines, but is cheaper in the end. **Write for Catalogue and full information.**



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are a sure cure for GALL: they put the animal in a better condition for service. Isn't it worth your while to make this small investment. Inquire of your harness-maker.

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can be made profitable if the head manager of the farm has the material ready. Disinfect all stanchions, stalls, mangers and gutters. Sweep down cobwebs and straw. Darken the windows with blinds or sacks in the hot days and keep the place cool.

The milk house should be perfectly clean. The cream separator is often kept unsanitary. Thoroughly wash the parts every day and keep the floor thoroughly scrubbed or flooded with water. The milk cans must be scalded and sun-dried each morning. Cool the milk after milking.

SWAT THE FLY.

Farmers are often guilty of keeping breeding holes for flies around the farm. Clean stables, sweet back yards, and the taking care of the manure from the stables promptly, will save the creations of millions of flies. Flies keep much cash out of the farmer's pocket, and they should be looked upon as robbers or murderers.

Protect all song birds and encourage them to nest on the farm.

WHAT ABOUT SPARROWS?

Are English sparrows any good, or should they be killed and trapped as fast as possible? Let us know what you think of it. Write to Grasmere about it.

Some correspondents tell us that they eat worms, particularly cabbage worms, and other insect pests and thus are a benefit to the farmer. Others say they are a robber of grain, a prey on other birds and a dirty pest around the buildings. If they are more harm than good, we ought to wage war on them. If not, what? Let us hear your views on the matter.

PREPARING FOR THE SHOWS.

The summer and fall fairs are coming on and livestock and farm products intended for showing should receive especial attention during this month. The main thing to do with livestock is to keep them healthy and to see that they get good pure water and food. The standing field crops will be a bigger thing than ever. Even if no prize is won, the effort pays in clean crops and fields.

IN THE FLOWER GARDEN.

Alyssum, California poppy, calliopsis, marigolds, mignonette, dwarf nasturtium, phlox and candytuft can be planted this month.

Start your house plants for next winter in your seed beds now. Watch your rose bushes for insects. Spray them.

Sow plenty of nitrate of soda and see that the plants get water. Manure water may be made by suspending a bushel of manure in a sack, in a barrel of water. If this is diluted to the color of weak tea it will answer well.

IN THE VEGETABLE GARDEN.

Plant radishes, lettuce, beets, beans, peas and corn now.

Potatoes may be planted also. They may follow where the early peas grew.

Plant now your cabbages and cauliflower plants. Tomatoes should be doing well by this time.

Plant melons, squash and cucumbers in

their hills as soon as possible in the month.

Use the beet tops for greens. Purslane, a weed, makes a good dish. Kale for winter greens can be sown now. Make a final planting of lima beans late in the month.

Spray all currants and melon vines.

Don't allow horseradish or rhubarb to go to seed. Pull the seed stalks out quickly.

Sow sweet corn for your table and for canning.

IN THE POULTRY PENS.

Open up warfare on lice with the warm weather. Use coal-oil and hot soapy water on the roosts and in all cracks and crevices.

For lice on young chicks, a little lard on the head has been found effective. Be careful not to use much.

See that the chicks have plenty of shade.

Keep fresh water before the chicks always.

Broody hens during June are often an annoyance. Place them in a slatted coop suspended where they can see the other hens. Give lots of water and feed lightly.

June-hatched chickens often do well for early winter table birds.

Bond Issue For Roads

A Good Road Expert in Missouri Talks About Its Financing

THE importance of road financing has always been recognized, but the underlying principles have been but little discussed, says a writer in the *Breeder's Gazette*. I shall endeavor to present some of the reasons for resorting to the issue of bonds in paying for road improvement, and the conditions precedent thereto. I am going to assume that, inasmuch as our highways belong to the public, and that the condition of these highways has a very important bearing upon the economic, social, educational and religious advancement of our entire citizenship, it, therefore, becomes the duty of the people through the public revenue to provide for their improvement and maintenance.

The question arises whether the money for this improvement shall be provided by an immediate tax levy or by the issuance of bonds, and if bonds are to be issued what would be the conditions requiring this method. Good public policy demands that we should not resort to borrowing money in public affairs, unless there is urgent need for the improvement; unless the improvement is of such a magnitude as to prevent its being paid for through the regular course of taxation; unless the improvement shall be of sufficient permanency to give full value to those who shall be called upon to repay the indebtedness.

As to the urgent need for the improvement, the question that confronts the

Famous Fleury Plows with "Tinkler" Wheels

"Original" No. 21 T.W. Plow

Wheel Plows are not a new thing, **but this** Wheel Plow is a new thing. The **relative position** of the wheels on the **Tinkler Attachment** makes a **vast improvement** in the working of these plows over **any** Wheel Plows ever **before** used. These Plows can be used without the wheels when desired. We are the **original makers**, under sole license from the Patentee, of this Wheel Plow—**imitated**, as in the case of Famous Fleury Plows Nos. 21, 15A—**and others**, by other manufacturers. We need not tell **you how** the many differences, great and little, between this attachment and others produce the superior results—but need only state the **results actually produced.**

Under the plain and simple directions with each Plow, the furrows are struck of uniform depth and straight; so also in the **finish** of lands. But it is in the **main work of plowing** that the **"Tinkler"** excels. Here this Plow **shines**—outclasses all others. The **old man**, the raw plow boy—**anybody** who can **hold lines and turn a wheel** into a furrow at the end—can do—**cannot help doing**—"plowing-match" work! No pressing down or up—or sideways—on the handles—expending (wasting) energy; just **let the Plow guide itself** and there is a furrow of **even depth** and **exact width.** In crossing "dead" furrows the particular "set" of the wheels causes the Plow to accommodate itself as only the best of plowmen can make an ordinary Plow do. This Plow is **invalnable** to the farmer with **unskilled** or **inefficient labor**—as, once set the Plow to cut and turn the width and style of furrow desired, it **will do** this style of work in spite of the poor ploughman and without his help.

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The top soil of these has been worked out, but below lies sub-soil, rich and fertile.

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C.X.L. Stumping Dynamite

will bring this to the surface, converting the worked-out soil into rich, productive acres at little cost. This method is very simple and safe to use. A most practical aid to every farmer. Also excellent for removing stumps, trees, boulders, making drains or ditches, excavating for foundations and numerous other purposes.

You should read our interesting booklet "C" which tells all about this wonderful energy that saves labor and turns waste into profit.

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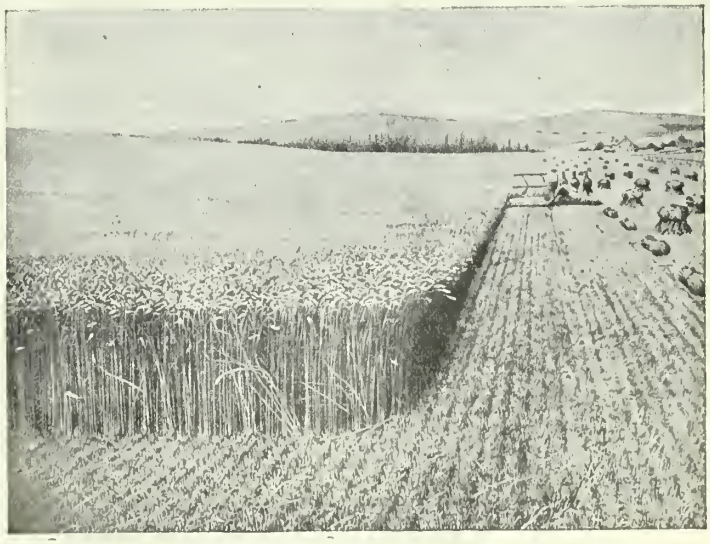

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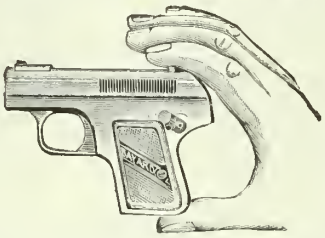
The **BAYARD** Pistols have been designed to meet the demand for Pocket Pistols, combining easiness of manipulation and simplicity of construction with maximum efficiency.

In size, they are no larger than most .25 cal. Pistols, although they shoot the powerful .32 and .380 cal. Cartridges.



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The young men and women with brains and initiative do not sit down and waste time wondering where their vacation money will come from. They use the means that are at hand to secure it. They take advantage of their spare time by spending it at work that will earn the best possible returns.

Last Spring hundreds of energetic young men and women earned the money with which they paid for their summer vacation by looking after our business in their own neighborhoods.

The work is fascinating, both because it is congenial and because a few spare hours each week devoted to it will enable you to enjoy that summer vacation later on.

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world to-day is the same that has confronted it during all the past, and will undoubtedly become more acute in the time to come—the food problem. This problem is so large that every fraction taken from the cost of production or the cost of transportation means a saving of millions to the people. While railroad rates have been reduced from 7 1-3 cents per ton mile in 1837 to 7.8 mills per ton mile in 1905, a reduction of nearly 90 per cent., practically no reduction has been effected in the cost of highway transportation. The Office of Public Roads has estimated the total cost of hauling to the shipping point that part of our agricultural, forest and miscellaneous products which we market, to be in excess of $500,000,000 annually. This does not take into account the cost of hauling from the different markets to the farm, or from farm to farm. The office further estimates that by the proper improvement of our highways this cost of hauling can be reduced over 50 per cent., thus effecting a saving of $250,000,000 annually. Again, the census figures offer some valuable material showing the need for highway improvement. These figures show that in 1890 only 36 per cent. of the people of this country lived in cities, in 1900 the number had risen to 40 per cent., and in 1910 to 46 per cent., an increase of 10 per cent. in city population as compared with rural population in 20 years. By this movement, therefore, our food-producing population is being depleted to an alarming extent. This question of the movement from the farm to the city cannot be solved until our highways are improved. Likewise the development of country social life, school life and religious welfare, are waiting on the improvement of our roads. These needs are far greater than the economic, but they are not so tangible, and hence do not appeal so readily to the people.

This urgent need for roads is further indicated by the insistent demand of the people for the improvement of our highways. The evidence of this comes from many sources. In the State of Missouri 300,000 citizens worked for two days with pick and shovel, with wagon, grader and drag, filling holes, building pikes, rounding up roads, equaling 600,000 days' work donated by the people, who are insisting upon roads that are usable. This is one of the greatest demonstrations of recent years, but it is only the forerunner of what we shall see later on. Within a very short time these 300,000 people will be demanding that instead of the continual repairing of dirt roads Missouri shall isaugurate a system of road improvement along more permanent lines, and that their work and their money shall be contributed to work that will endure.

Another evidence of the demand for good roads is found is the rapidly increasing number of good roads' associations, international, national, State, county and city. We have numerous national associations, and nearly every State has a State association. In some States each county has an association, and no city is too small to boast of a

good roads or automobile club. Not only that, but most of the commercial organizations, the women's clubs, the farmers' organizations and the bankers' associations, have active good roads committees doing effective work for the cause.

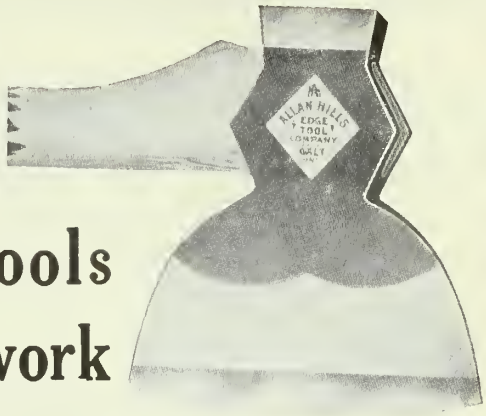
Perhaps the increase in the use of the automobile in the rural districts can best be illustrated by the traffic census taken under the auspices of A. N. Johnson, State engineer of Illinois, at a point on the Central Transcontinental Highway just west of De Kalb, Ill. This census was taken first during six months of 1907, next during August and September, 1912, and again during August and September, 1913. In 1907 the motor driven traffic was 5 per cent. of the total traffic; in 1912 (five years later) the motor traffic was 50 per cent. of the total, while in 1913 the motor traffic was 60 per cent., thus showing a total increase from 5 per cent. in 1907 to 60 per cent. in 1913.

Another illustration that came under my own observation was at the annual meeting of the De Kalb County Soil Improvement Association. This meeting was held at a point three miles distant from De Kalb, Ill. The attendance was estimated at 1,100. Of this number at least 90 per cent. were farmers actually living on farms or operating farms. By actual count there were on the ground twenty-six horse-drawn vehicles, consisting of eighteen single buggies and eight double buggies, as compared with 109 five and seven-passenger automobiles. Thus it will be seen that not over 75 persons of this company of 1,100 farmers came in buggies, while approximately 600 came in automobiles, the remainder coming by trolley. It has been said that the good roads movement was in the interest of the leisure class of the cities and the pleasure-seekers, and that the farmer was opposed to the movement, because only the residents of the city received the benefit.

CATCHING A THIEF WITH A CAMERA

A truck farmer who prided himself upon his cantaloupes found that his finest melons disappeared, but try as he might, he could get no clue to the thief. Having a photographic camera he hit upon a scheme to discover the responsible party.

Concealing the camera in a thicket close at hand, he focused it upon a delicious banana cantaloupe that was just beginning to turn yellow, connecting the stem by a dark cord to the shutter. When he returned to the patch that evening the melon was gone. He hurried the film to the dark room, and upon developing it, recognized the stooping figure as a neighborhood character. All that was necessary was to mail him a post-card with his picture upon it, and the ravages stopped short.



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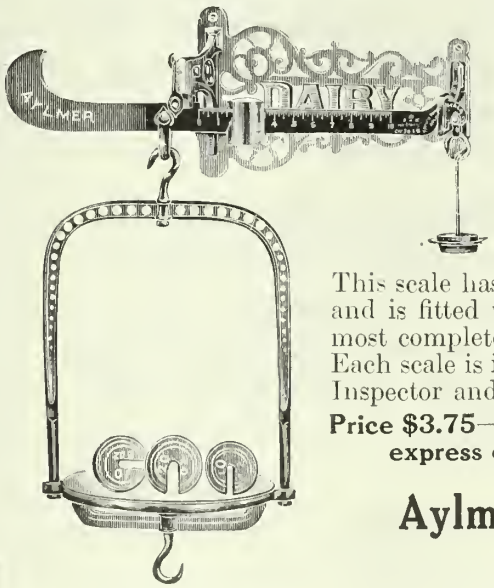

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On each order, new or renewal, you will receive a definite commission, so that your salary will be gauged entirely by your efforts. No previous business experience is necessary. We coach you and co-operate with you at all times. If you will write us to-day, we will gladly tell you further about the work.

Do not delay Writing

Farmer's Magazine

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Are Vocation Schools the Solution?

Continued from Page 42.

toward the professions will go that way, all the better for an all-round practical education. The boy who is "cut out" to be a farmer will be a farmer instead of a misfit doctor or lawyer. The lad with inclinations toward engineering may follow that bent, and so all round. We must cease trying to discriminate as to degree of ability, and look rather to the character of it. We must banish from our schools the pernicious notion that manual labor is degrading. All honorable work is noble. We must realize that it is not the extent but the nature of a man's aptitude that should determine his life work. We ought to perceive that a course of education which would answer at one time when education was but for the privileged or ruling few, will not do to-day when education is for all—artizan, farmer and homemaker as well as professional man, statesman and lady of leisure.

The change proposed may not decrease the cost of living or eliminate class consciousness. But it will tend to an efficient, well-ordered society, to individual well-being and to national achievement along advantageous lines. It may not greatly increase the number of farmers but it will tend to more efficient farming, to greater intelligence among those carrying on the occupation, to more capable representation of farmers' interests in the political field and consequently to a removal of some of the economic burdens now hampering agriculture. It will mean a better agriculture and a better standard of rural citizenship and it will also strengthen our national position in the industrial field. The spectre of German competition in the manufacturing world will not then loom up so formidably as it does now, for trained skill will be met with trained skill.

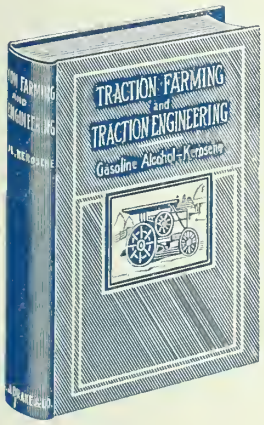
Our teaching has been too abstract for maximum results even from a cultural point of view. There is nothing like actualities and especially living things to interest a child. Let the juvenile mind study, for instance, the germinating seed and as the embryo plant unfolds the child's mind will unfold with it. Let us relate schooling to the real life of the present as well as to the history of the dead past. Thus shall we educate our youth along lines that will be continued past the schoolroom, conducing not only to educational efficiency but to the training of an alert, well-informed, well organized masterful people, who will raise the plane of agriculture, the plane of industry and the plane of character and citizenship. For of all the purposes of education, the development of personal character and citizenship are and should always remain, the greatest.

A NEW BOOK FOR FARMERS

Traction Farming and Traction Engineering

GASOLINE--ALCOHOL--KEROSENE

By JAMES H. STEPHENSON, M.E.
Author of "Farm Engines,"
"The Young Engineer's Guide," etc.



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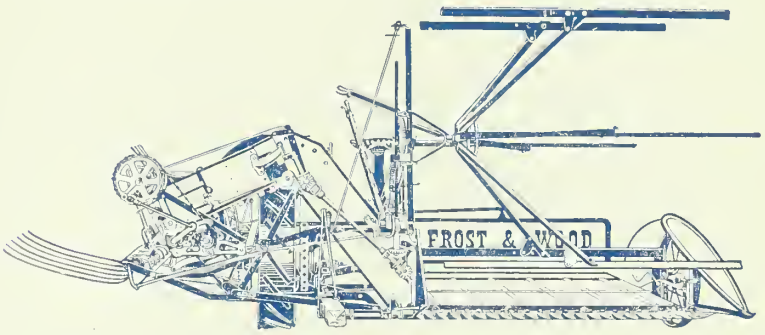

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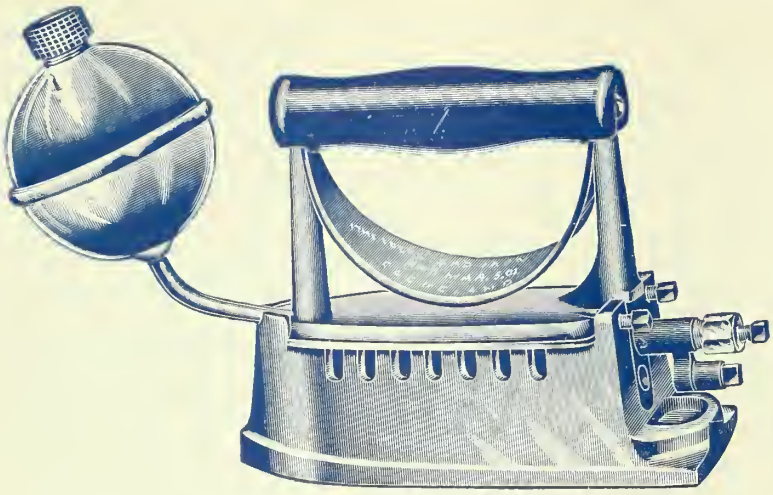

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THE FARMER'S MAGAZINE
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I was sitting alone in the cafe, and had just reached for the sugar preparatory to putting it into my coffee. Outside the weather was hideous. Snow and sleet came swirling down, and the wind howled frightfully. Every time the outer door opened, a draft of unwelcome air penetrated the uttermost corners of the room. Still, I was comfortable. The snow and sleet and wind conveyed nothing to me except an abstract thanksgiving that I was where it could not affect me. While I dreamed and sipped my coffee, the door opened and closed, and admitted—Sturtevant.

Sturtevant was an undeniable failure, but, withal, an artist of more than ordinary talent. He had, however, fallen into the rut traveled by ne'er-do-wells, and was out at the elbows as well as insolvent.

As I raised my eyes to Sturtevant's, I was conscious of mild surprise at the change in his appearance. Yet he was not dressed differently. He wore the same threadbare coat in which he always appeared, and the old brown hat was the same. And yet there was something new and strange in his appearance. As he swished his hat around to relieve it of the burden of snow deposited by the howling nor'-wester, there was something new in the gesticulation. I could not remember when I had invited Sturtevant to dine with me, but involuntarily I beckoned to him. He nodded, and presently seated himself opposite to me. I asked him what he would have, and he, after scanning the bill of fare carelessly, ordered from it leisurely, and invited me to join him in coffee for two. I watched him in stupid wonder, but, as I had invited the obligation, I was prepared to pay for it, although I knew I hadn't sufficient cash to settle the bill. Meanwhile, I noted the brightness of his usual lack-luster eyes, and the healthful, hopeful glow upon his cheek, with increasing amazement.

"Have you lost a rich uncle?" I asked.

"No," he replied calmly, "but I have found my mascot."

"Brindle bull, or terrier?" I inquired.

"Currier," said Sturtevant, at length, pausing with his coffee cup half way to his lips; "I see that I have surprised you. It is not strange, for I am a surprise to myself. I am a new man, a different man—and the alteration has taken place in the last few hours. You have seen me come into this place 'broke' many a time, when you have turned away, so that I would think you did not see me. I knew why you did that. It was not because you did not want to pay for a dinner, but because you did not have the money to do it. Is that your check? Let me have it. Thank you. I haven't any money with me to-night, but I,—well, this is my treat."

He called the waiter to him, and with an inimitable flourish, signed his name on the back of the two checks, and waved him away. After that he was silent a moment while he looked into my eyes, smiling at the astonishment which I in vain strove to conceal.

"Do you know an artist who possesses more talent than I?" he asked, presently. "No. Do you happen to know anything in the line of my profession that I could not accomplish, if I applied myself to it? No. You have been a reporter on the dailies for—how many?—seven or eight years. Do you remember when I ever had any credit until to-night? No. Was I refused just now? You have seen for yourself. To-morrow my new career begins. Within a month I shall have a bank account. Why? Because I have discovered the secret of success.

"Yes," he continued, when I did not reply, "my fortune is made. I have been reading a strange story, and since reading it, I feel that my fortune is assured. It will make your fortune, too. All you have to do is to read it. You have no idea what it will do for you. Nothing is impossible after you know that story. It makes everything as plain as A, B, C. The very instant you grasp its true meaning, success is certain. This morning I was a hopeless, aimless bit of garbage in the metropolitan ash can; to-night I wouldn't change places with a millionaire. That sounds foolish, but it is true. The millionaire has spent his enthusiasm; mine is all at hand."

"You amaze me," I said, wondering if he had been drinking absinthe. "Won't you tell me the story? I should like to hear it."

"Certainly. I mean to tell it to the whole world. It is really remarkable that it should have been written and should remain in print so long, with never a soul to appreciate it until now. This morning I was starving. I hadn't any credit, nor a place to get a meal. I was seriously meditating suicide. I had gone to three of the papers for which I had done work, and had been handed back all that I had submitted. I had to choose quickly between death by suicide and death slowly by starvation. Then I found the story and read it. You can hardly imagine the transformation. Why, my dear boy, everything changed at once—and there you are."

"But what is the story, Sturtevant?"

"Wait; let me finish. I took those same old drawings to other editors, and every one of them was accepted at once."

"Can the story do for others what it has done for you? For example, would it be of assistance to me?" I asked.

"Help you? why not? Listen and I will tell it to you, although, really, you should read it. Still, I will tell it as best I can. It is like this: you see—"

The waiter interrupted us at that moment. He informed Sturtevant that he was wanted at the telephone, and, with a word of apology, the artist left the table. Five minutes later I saw him rush out into the sleet and wind and disappear. Within the recollection of the frequenters of that cafe Sturtevant had never before been called out by telephone. That, of itself, was substantial proof of a change in his circumstances.

One night, on the street, I encountered Avery, a former college chum, then a reporter on one of the evening papers. It was about a month after my memorable interview with Sturtevant, which, by that time, was almost forgotten.

"Hello, old chap," he said; "how's the world using you? Still on space?"

"Yes," I replied, bitterly, "with prospects of being on the town, shortly. But you look as if things were coming your way. Tell me all about it."

"Things have been coming my way, for a fact, and it is all remarkable, when all is said. You know Sturtevant, don't you? It's all due to him. I was plumb down on my luck—thinking of the morgue and all that—looking for you, in fact, with the idea that you would lend me enough to pay my room rent, when I met Sturtevant. He told me a story, and, really, old man, it is the most remarkable story you ever heard; it made a new man of me. Within twenty-four hours I was on my feet, and I've hardly known a care or a trouble since."

Avery's statement, uttered calmly, and with the air of one who had merely pronounced an axiom, recalled to my mind the conversation with Sturtevant in the cafe that stormy night, nearly a month before.

"It must be a remarkable story," I said, incredulously. "Sturtevant mentioned it to me once. I have not seen him since. Where is he now?"

"He has been making war sketches in Cuba, at two hundred a week; he's just returned. It is a fact that everybody that has heard that story has done well since. There are Cosgrove and Phillips—friends of mine—you don't know them. One's a real estate agent; the other a broker's clerk. Sturtevant told them the story, and they have experienced the same results that I have; and they are not the only ones, either."

"Do you know the story?" I asked. "Will you try its effect on me?"

"Certainly; with the greatest pleasure in the world. I would like to have it printed in big, black type, and posted on the elevated stations throughout New York. It certainly would do a lot of good, and it's as simple as A, B, C; like living on a farm. Excuse me a minute, will you? I see Danforth over there. Back in a minute, old chap."

He nodded and smiled—and was gone. I saw him join the man whom he had designated as Danforth. My attention was distracted for a moment, and, when I looked again, both had disappeared.

The certainty that the wonderful story—I began to regard it as magic—was in the air, possessed me. As I started to walk homeward, fingering the solitary nickel in my pocket and contemplating the certainty of riding down-town in the morning, I experienced the sensation of something stealthily pursuing me, as if Fate were treading along behind me, yet never overtaking, and I was conscious that I was possessed with or by the story. When I reached Union Square, I examined my address book for the home of Sturtevant. It was not recorded there. Then I remembered the cafe in University place, and, although the hour was late, it occurred to me that he might be there.

He was! In a far corner of the room, surrounded by a group of acquaintances, I saw him. He discovered me at the same instant, and motioned to me to join them at the table. There was no chance for the story, however. There were half a dozen around the table, and I was the farthest removed from Sturtevant. On my right, when I took my seat, was a doctor; on my left a lawyer. Facing me on the other side was a novelist with whom I had some acquaintance. The others were artists and newspaper men.

"It's too bad, Mr. Currier," remarked the doctor; "you should have come a little sooner. Sturtevant has been telling us a story; it is quite wonderful, really. I say, Sturtevant, won't you tell that story again, for the benefit of Mr. Currier?"

"Why, yes. I believe that Currier has, somehow, failed to hear the magic story, although, as a matter of fact, I think he was the first one to whom I mentioned it at all. It was here, in this cafe, too—at this very table. It seems incredible that a mere story can have such a tonic effect upon the success of so many persons who are engaged in such widely different occupations, but that is what it has done. There was Parsons, for example. He is a broker, you know, and had been on the wrong side of the market for a month. He had utterly lost his grip and was on the verge of failure. I happened to meet him at the time he was feeling the bluest, and, before we parted, something brought me around to the subject of the story, and I related it to him. It had the same effect upon him that it had on me, and has had upon everybody who has heard it."

From that the company entered upon a general discussion of theories. Now and then slight references were made to the story itself, and they were just sufficient to tantalize me — the only one person who had not heard it.

At length, I left my chair, and, passing around the table, seized Sturtevant by one arm, and drew him aside.

"If you have any consideration for an old friend who is rapidly being driven mad by the existence of that confounded story, which Fate seems determined that I shall never hear, you will relate it to me now," I said, savagely.

"All right," he said. "The others will excuse me for a few moments, I think. Sit down here and you shall have it. I found it pasted in an old scrapbook I purchased in Ann Street, for three cents; and there isn't a thing about it by which one can get any idea in what publication it originally appeared, or who wrote it. When I discovered it, I began casually to read it, and in a moment I was interested. Before I left it, I had read it through many times, so that I could repeat it almost word for word. It affected me strangely—as if I had come in contact with some strong personality. There seems to be in the story a personal element that applies to every one who reads it. Well, after I had read it several times, I began to think it over. I couldn't stay in the house, so I seized my coat and hat and went out. I must have walked several miles, buoyantly, without realizing that I was the same man who, only a short time before, had been in the depths of despondency. That was the day I met you here—you remember."

We were interrupted at that instant by a uniformed messenger, who handed Sturtevant a telegram. It was from his chief, and demanded his instant attendance at the office.

"Too bad!" said Sturtevant, rising and extending his hand. "Tell you what I'll do, old chap. I'm not likely to be gone any more than an hour or two. You take my key and wait for me in my room. In the escritoire near the window you will find an old scrapbook, bound in rawhide. It was manufactured, I have no doubt, by the author of the magic story."

I found the book without difficulty. It was quaint and strange. The phraseology was unusual and could have originated in no other brain than that of its author.

This remarkable story which wrought such wonderful changes in Sturtevant's life, and in the lives of all who have heard it, is published in book form, and sold by The MacLean Publishing Co., Ltd., 143-153 University Avenue, Toronto, and will be mailed postage paid, on receipt of two dollars for a copy bound in sheepskin or one dollar for a copy bound in cloth, with the understanding that if you regret reading it, the book may be returned and the company will refund your money.

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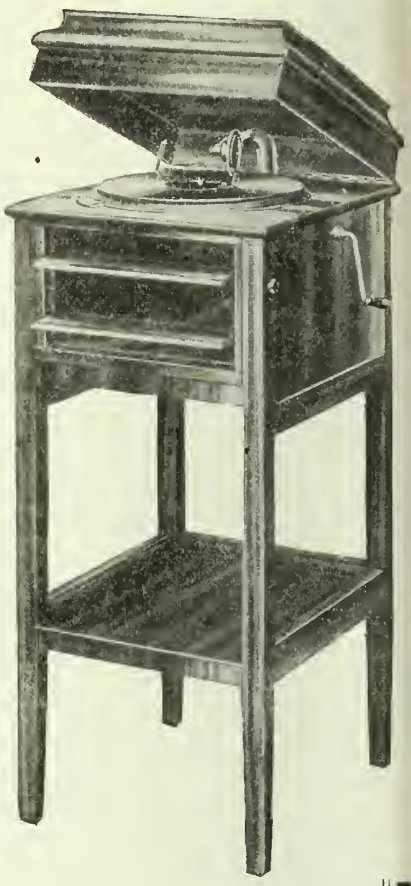

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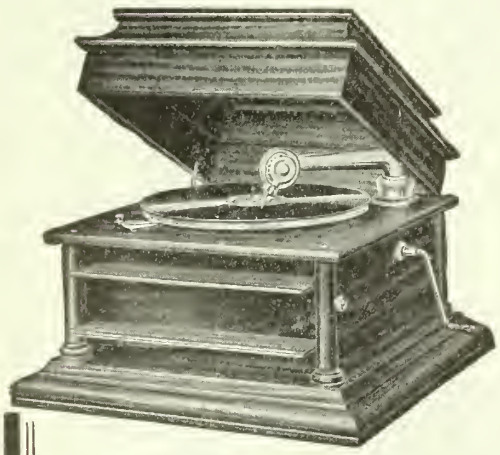

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JULY, 1914

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THE EDITOR'S COLUMN

A few things that will brighten the August issue:

The Machine Milkmaid.

You will enjoy the delightful article by Mr. Albright in the July issue on the gentle art of milking. Many a person has risen to affluence by reason of the paying cow.

Now is the day of the mechanical milker, and a story in the August issue will be of big interest to every milker of over half a dozen cows. When you can pay for this convenience in part of your first month's milk checks, why labor about the labor question in the dairy business?

Conserving Our Farm Women.

There is no more hopeful sign of the times than that of the progressive work being done by our Women's Institutes.

The Associate Editor of "Farmer's" is a well-known institute lecturer and a lover of the farm. Her article goes into the saving of flesh and blood in the farm homes. The use of machinery and the helpfulness of sundry conveniences and clever management will be good hints for every woman.

Selling With a Camera.

Many articles in general use by business men have been appropriated by the progressive farmers of Canada. The automobile and truck is spreading fast. The electric motor is invading every stable and barn.

The camera as a register of farm events, as a recorder of animal growth and comparative situations, has also become a farmer's servant. The writer of this article has some evidence that will be valuable to all farmers.

The Arithmetic of Rabbits.

John Bartlett, the British Columbia correspondent of "Farmer's," has been watching Canada's importation of rabbits from Australia. This has been made a subject of study for money-making by the Canadian boy. This article will be mighty good reading for every farm boy.

Dressing Poultry For Market.

The important time in the poultry business is the bringing in of the dollars. One man may be an enthusiast for the beginning and during the incubator period, but unless he can supply a waiting public with the right goods, attractively put up, he misses the rewards.

E. I. Farrington, an expert observer, has given a special article, illustrated with good photos, on the dressing and marketing of poultry in the August issue.

The Country Store and the Farm.

Uncle Phil, an old grocer, talks to his nephew about the relationship existing between the country storekeeper and the farmer. He deals with the situation as it is to-day.

The farmer is a great consumer of up-to-date goods. As one man at the Ad Club recently said, "Some fellows have been bending all their energies to sell the farmer blue overalls and cowhide boots, when they at last wake up to see the same farmer riding by in an automobile and wearing a Panama."

This is a strong story by one of our best writers.

Land o' Gold.

The interest in this excellent farm serial is growing. The old farm is taking on a new look. The bride is coming. There's human interest in every turn.

Miss Hunter, by the way, a talented illustrator, and a scion of that well-known family of Hereford fame, has surpassed herself in the illustrations in the August number.

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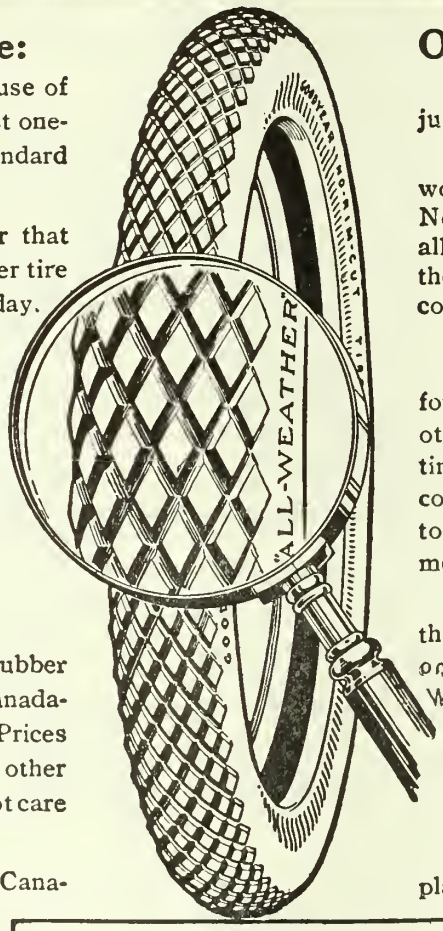

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"YES, we hear a great deal about this back-to-the-land business, I know," said a friend of mine in South Oxford the other day. "But I don't seem to notice a powerful number backing our way, just now. You couldn't drive most of the fellows who talk that rot on to a farm with a sawed-off shotgun.

"And don't tell me anything about blue sky and an appetite! I haven't time to look at the sky, and with thirty-four cows to milk why shouldn't I have an appetite? I hire two men, each at thirty-five dollars a month and board, and then I have to do most of the work myself.

"Yes, I make a little money; but I labor sixteen hours a day, and I never get more than twenty miles from a milk pail. If you want to experience a Mexican revolution, just ask my wife, any Sunday morning, how she likes to farm.

"If someone will show me how to handle this job while wages are thirty-five per, so I can get a chance to shave once through the week, I'll shake the hayseed out of my ears long enough to hear what these back-to-the-landers have to say."

And that pretty nearly indicates the labor condition in a great many localities of Ontario. In turn this leads to many other problems. Young boys must drop out of school to help at home. Society is stagnant—neighbors haven't time to be sociable. Even church life wanes in some districts.

But why catalogue all the results! Those who farm know the rest. Others, perhaps, will never understand.

A great many writers get excited these days over the rural problem. It is a disease of long standing. I have read very much about it, but no two of the doctors diagnose it the same nor prescribe the same treatment.

I think my dairy friend came as near it as many. Give the farmer less work to do and add a little more profit to what he does, and there will be no rural problem.

"But I have not given up hope yet," continued Ned. "They have the Hydro-Electric in North and West Oxford now. It is coming to Dereham soon, I believe If it will accomplish what some claim for it, I think I shall have the labor problem by the horns after all. I went out to see Raymond's farm near Ingersoll, the other day, which is hitched up, and it looked good to me. Before long I hope to have a chance to introduce electricity to my Holsteins."

Following the electric article in the June issue this contribution goes into the application of electricity to the farmers of Ontario. Already in parts of Oxford and Middlesex Counties farm buildings and machinery are linked up to the Hydro-Electric system. The writer made an intimate study of those conditions and obtained interesting interviews with different members of the Hydro-Electric Commission. His conclusions were presented to competent professors for their opinion. This article, however, may be taken as authoritative on the present situation.

Motor with the belting to the overhead shaft and its connection with the emery wheel and other machines in the basement.

BECK'S CIRCUS IS ORGANIZED.

For many years electrical power development and Germany seemed inseparable. The one followed the other as naturally as a collie takes to cattle. So the Hon. Adam Beck and his engineers journeyed across the great water to make an extensive survey of German conditions. Particularly they studied the application of electricity to farming. In Saxony, where the greatest development has been made, they saw all ordinary farm operations performed by this energy.

There the fields are plowed, harvesting and threshing operations are conducted, work of all kinds connected with dairying is performed—the cows are milked, the milk separated, the butter churned and kneaded—water is pumped, the silo is filled, the fertilizer conveyed to the yard, the buildings and yards lighted, and various household operations are performed. In fact, a study of the report made by the Commission leads one to believe that all that is required now is an electric current to wind the clock and kick out the cat to entirely complete the German system.

During the survey the Commission discovered a few things that gave them the

Sunday smile. In the first place, power was sold at a much higher rate in Germany than it might be in Ontario. In the second place, there was no great provincial system of Peoples' Lines as we have here now. The farmers there either secure power from an urban municipality or they organize a company to build a plant. Wherefore Mr. Beck returned fully satisfied that electric energy *could* be supplied to the Ontario farm just as successfully as it is in Germany.

That was yesterday. To-day we are not compelled to use other lands as illustrations of what may be done. We have hydro-electric power working successfully on our own farms now, and several communities, while some thirty-plus townships are taking the required steps to have it installed.

The campaign was started by demonstrations at Toronto Exhibition and at various fall fairs. This displayed electric energy actually hitched up performing various kinds of farm and household work. Of course, some people laughed. Some public men called the demonstration outfit "Beck's Circus." At any rate, it was a very successful circus, and is developing a great number of rings.

Very soon certain rural communities looked into this matter more closely and a number were hitched up. In Oxford County several districts are served in the neighborhood of Ingersoll, Woodstock, and Norwich. In Toronto township, Peel county, 96 consumers are supplied, and Flamboro, just out of Hamilton, is hitched up. So rapid is the extension of the work that even now other rural municipalities may be connected.

Demonstrations were conducted in these districts by J. W. Purcell, municipal engineer of the Commission, to show what might be accomplished by the current. Altogether there are over a dozen so-called demonstration farms, many situated in Oxford County. In almost every case the demonstrations were very well attended by enthusiastic farmers, who could see in the electric spark a great light breaking in the east.

OUT-GERMANING THE GERMANS.

In the townships of North and West Oxford the hydro-electric power has been applied to practically every form of work which steam, gasoline, or wind power has hitherto performed. At a number of demonstrations upon Oxford farms last fall some interesting evidence was obtained by a party, one of the number being a reporter.

Upon the farm of Mr. D. W. Clark, of West Oxford, the silo has been filled with entire satisfaction for three years. He owns an eighty-five-acre mixed farm, grows about fifteen acres of corn every year, and feeds over twenty milch cows.

The 5-h.p. motor used upon this occasion ran a load through the cutting-box in just three minutes. In one day last fall, 28 loads were lifted at an estimated power cost of 48 cents. In 1912 100 loads were put in the silo at a cost of $1.19.

"Am I in favor of the hydro-electric?" said Mr. Clark. "Well, I think it has everything else stopped that I've ever had any experience with. In the old days I used to pay from $15 to $18 a day for a machine, and had to take two weeks off at my busiest time changing work with my neighbors Besides, I make better ensilage. Filling from day to day gives the corn a chance to settle, and I make an extra ten feet of feed. I have more corn than is sufficient to fill my silo, and I cut the surplus now for feed in the fall. Besides all this, I can get at my corn when it is ready. Anyone who has laid for a silo-filler with a frost in the air knows what that means."

And this is only one of the operations performed. The house and stables are lighted and are supplied with running water, and a turnip pulper, emery wheel and grindstone are operated. Mr. Clark plans to purchase a milking machine and a No. 2 Little Giant thresher. He will then have a complete outfit such as Mr. Beck hopes to see become used extensively throughout Ontario.

"What about the cost? Well, my initial expense was $150," said Mr. Clark. "The power cost for the first year in which I used it was $65. You may say I am satisfied. I'm just as tickled as is the Honorable Adam over there."

But let us hurry on to another farm where work of a different nature is performed.

On the outskirts of Woodstock, Mr. Thomas Dent owns a dairy farm where

The fanning-mill and cutting-box are easily hitched up.

fifty milking cows are kept the year round. In the past these cows have meant much work for both Thomas Senior and Thomas Junior and much difficulty in securing men who would milk twice a day.

Now, a 1-h.p. motor runs a B.L.K. milking machine. Six cows are milked at one time and four or five men are displaced. The entire herd was milked under time in less than one hour and a half.

"Yes, I am satisfied," said Mr. Dent. "I pay a flat rate of $94 a year for power. It is pretty high, but I wouldn't go back to the old system at all."

JUST ONE MORE VISIT.

Near Ingersoll a large farm has been hitched up, owned by George Raymond & Son. Now, this farm certainly doesn't hide its light under a bushel. Even the flagpole and gateposts are wired. Altogether there are forty-three lights connected within and without the buildings.

"Tell just exactly what your little 2-h.p. motor does," Mr. Raymond was requested.

ITS GREAT SERVICES.

"In the first place, it runs the milking machine twice a day. Then every morning, in the stables, we heat two fourteen-quart pails of water to boiling point. During the winter we cut dry cornstalks, cut straw, and do our own grinding of grain. We use it to run the root pulper, emery-wheel and grindstone, and until this year a cider mill. Also, during the winter it supplies power for both buzz and drag saws. We used it to cut all our wood, and it gave exceptionally good satisfaction with the drag saw. In the house it supplied current for eighteen lights, all Tungsten lamps but four, and it furnished over twenty barn lights. We also use it in the house for current for a flatiron and an electric toaster. By means of an air-heater, it heats two bedrooms, and we also use it with a warming-pan."

The cost of connections and motor were as follows:—Wiring house, $100; wiring barn, $50; 2-h.p. motor, $100; making a total of $250. Provided he does not overstep the 2-h.p. mark, his power charge is $95 a year.

"We could fill our silo, which is 42ft. x 16ft., with a 2-h.p. motor," said Mr. Raymond; "but a larger one gives better satisfaction. This year we are using a portable 5-h.p. motor.

"Before we got the power we did a good deal of our work with a gasoline engine. Three or four times we had to have an expert out to set it right—it sure kept us busy trying to find out what ailed it. I will not say it was dearer power, but it was much less convenient power than the hydro-electric."

HOW WILL YOU GET THE CURRENT?

"What is the correct procedure for the ratepayers of a municipality to follow who desire to be hitched up to the Hydro-electric?" I asked an engineer of the Commission.

"Now you mention a matter that does not seem to be always well understood," replied he.

"First, the ones interested must sign a petition requesting the council to obtain from the Hydro-Electric Power Commission an estimate of the cost to the said ratepayers, respectively, of supplying them with Hydro-Electric energy. Upon this petition the name, lot and concession of each ratepayer interested, together with the number of lights and horse-power required must be given. Any person may circulate this petition and blank forms are cheerfully supplied by the Hon. Adam Beck, Continental Life Building, Toronto.

"Upon receipt of this petition the council forwards it to the Commission and an estimate is made. This, of course, will vary in different localities, depending upon the length of low-tension line required and upon the total number of h.p. contracted for. We find that the petitions vary widely in these particulars. They range from a few consumers and a small amount of energy to as high as 480 persons with 800 h.p. (their own estimate).

"We have an extension campaign under way, the plans of which are very simple. Some local man, usually a councillor or the reeve, canvasses the municipality and we send an expert to address any meetings that are called and to give any advice required."

"What does this energy cost and what methods are employed in collecting the fees?" I inquired.

"We cannot give a definite cost to cover all cases because there is so wide a variance in different localities, as I have already explained. We have charged a flat rate for power of $30 per h.p. or thereabouts, so far.

"It may be possible to charge by the kilowatt-hour later on. The power charge is made to cover the actual cost of power the interest on money borrowed, depreciation and sinking fund, as in the case of urban municipalities.

"Then we have another fee called a service charge. The Commission pays two-thirds of the cost of transformers, meters, secondary wires, etc., and the municipality then collects this in the form of a tax so regulated that a certain fixed sum paid through a number of years by the consumers will clear away the debt. After that time no further service charge is levied and the ratepayers really become owners of the system.

"In taking the power to a consumer the Commission pays all cost to the first pole on the property. The wiring, motor, etc., are then paid for by the farmer."

When asked about the area that could be served by a transformer station and the number of consumers necessary to make the plan feasible, more definite information was given.

A station of 4,000 volts will feed a radius of from eight to ten miles, he explained. Any number of people may be served but the more densely settled the community the lower the individual charge will be. In Toronto township, there are 96 consumers, the majority of whom are hitched up now. In Oxford, near Ingersoll, Woodstock and Norwich short sections prevail with about 50 consumers.

"I expect to see old Ontario covered eventually by a network of lines," continued my informant. "They should be as common as rural telephone lines. But, of course, there will be isolated districts that will be very hard to reach.

"When that time comes farming should be conducted after a different fashion, too. Now a farmer demands his power in large quantities. He may not require more than 5 h.p. maximum, but he bunches his work until 25 h.p. is required. Of course, the scarcity of labor has something to do with this, I know.

"Now a steady flexible supply of power makes these conditions unnecessary. The heavier operations spread over a longer time would require no more than 4 to 5 h.p.

"I would advise about 2 h.p. for the average farmer. If necessary, a syndicate can secure a large motor to work on a route. The power will be furnished from a distributing line at 2,200 volts. But the total amount of power must be contracted for by the members to cover the demands of the large motor."

Sir Adam Beck, commonly called the Minister of Power in the Ontario Government.

WHY THE MISSIONARY FELL DOWN.

Now all the foregoing tends to prove that Hydro-Electric power is a wonderfully good thing for rural Ontario. But I am reminded of the missionary and the newly converted Mohawk at Brantford.

"Do you believe the story of Jonah and the whale, and of the water and the wine, and of the three Hebrew children in the fiery furnace?" asked the preacher.

"No, I don't believe the furnace story and now I don't believe that fish yarn either," returned the Indian.

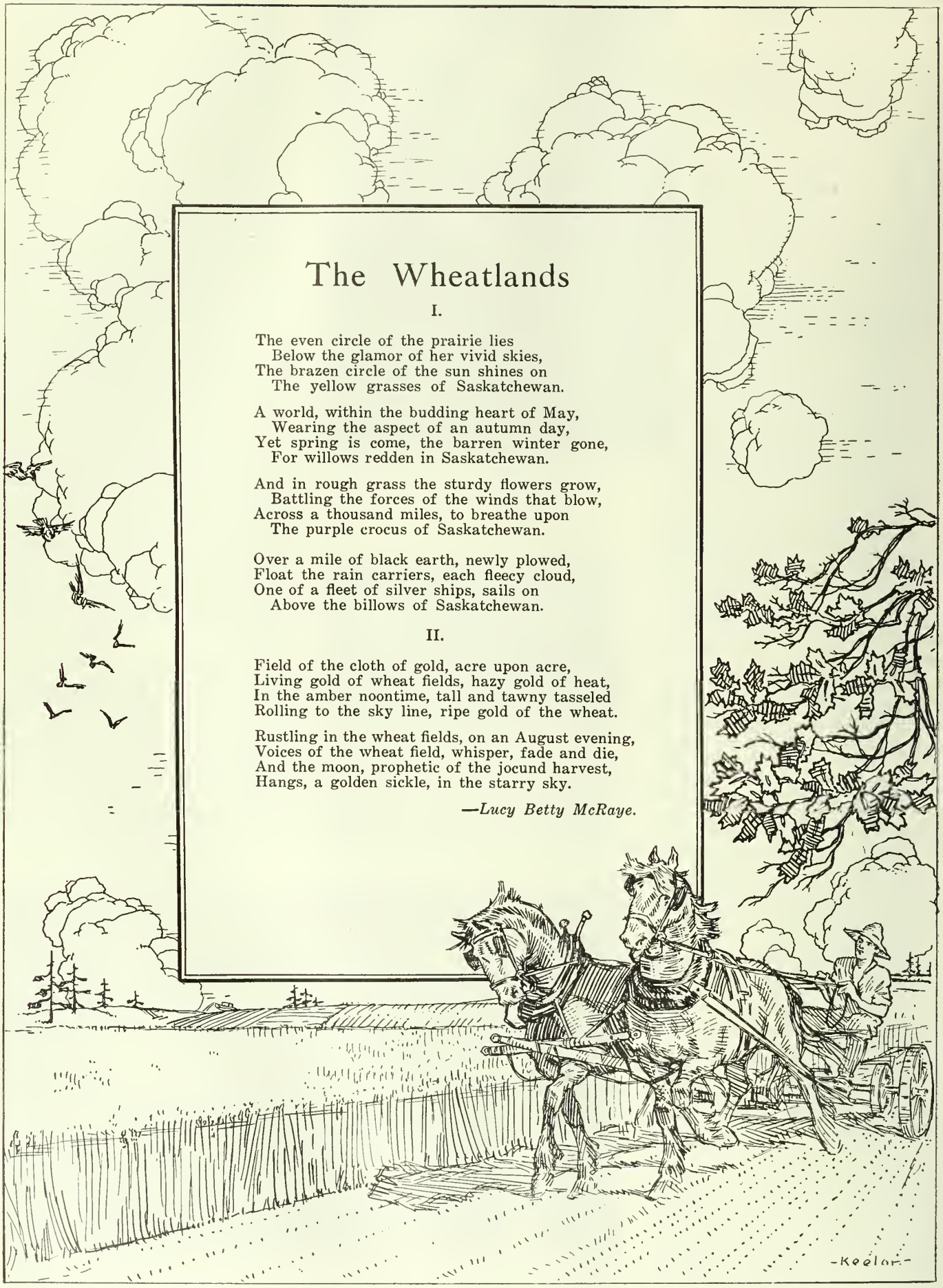
He had gone too far! And so it is possible to go too far in lauding the greatness of the Hydro-Electric. That it is doing a wonderful work there can be no question. Whether it is the cheapest form of power procurable or not is another matter.

After a series of very careful experiments conducted by Professor W. H. Day, of the Ontario Agricultural College, Guelph—a most painstaking investigator by the way—evidence was adduced which tended to show that electricity at a flat rate was dearer than energy supplied by a gasoline engine, unless the full power contracted for could be used at least two and a half to three hours every day in the year. His figures are based upon the cost of grinding grain. He showed that with a service charge of $20 and with power at $30 per h.p. it would cost ten times as much to grind grain by electricity as by gasoline power, if the actual work done averages 1 h.p. one hour a day. Furthermore, he argues that electricity will never be used extensively for heating purposes, as even in Saxony we are told that the current is used to saw firewood. Further still, he calculated the cost of lighting on the *average* farm by coal-oil to be about $4 a year. Therefore his final calculations show that a farmer can run a 3-h.p. gasoline engine at full power one hour every day or a one-horse-power three hours every day, which is probably twice the requirements on the average farm, heat his house with coal equal to heat of 3 h.p. and light it with coal-oil at a total cost of $50 yearly, whereas 3 h.p. of electrical energy would cost $110. And besides 3 h.p. would not give sufficient heat for cold weather, so it would be necessary to have both coal stoves and electric heaters. If no attempt is made to use the current for heat, then cost of power and light by gasoline and oil would be $33 and by electricity $110.

"The present method of paying," he states, "is largely responsible for this. For if meters were established so that each subscriber would pay for the power actually used by him, the cost to the average farmer would be much less with electric power than with gasoline. Suppose thirty users are supplied from one line, and each contracts for 3-h.p.; then each is entitled to 3 h.p. twenty-four hours in

Continued on Page 82.

The wife's work in the home comes in for its share in the newer agriculture. She uses an electric vacuum cleaner, and takes the chill off the room by her electric heater, while electric lamps everywhere do away with the dust and the dirt of former times.



The Wheatlands

I.

The even circle of the prairie lies
  Below the glamor of her vivid skies,
The brazen circle of the sun shines on
  The yellow grasses of Saskatchewan.

A world, within the budding heart of May,
  Wearing the aspect of an autumn day,
Yet spring is come, the barren winter gone,
  For willows redden in Saskatchewan.

And in rough grass the sturdy flowers grow,
  Battling the forces of the winds that blow,
Across a thousand miles, to breathe upon
  The purple crocus of Saskatchewan.

Over a mile of black earth, newly plowed,
Float the rain carriers, each fleecy cloud,
One of a fleet of silver ships, sails on
  Above the billows of Saskatchewan.

II.

Field of the cloth of gold, acre upon acre,
Living gold of wheat fields, hazy gold of heat,
In the amber noontime, tall and tawny tasseled
Rolling to the sky line, ripe gold of the wheat.

Rustling in the wheat fields, on an August evening,
Voices of the wheat field, whisper, fade and die,
And the moon, prophetic of the jocund harvest,
Hangs, a golden sickle, in the starry sky.

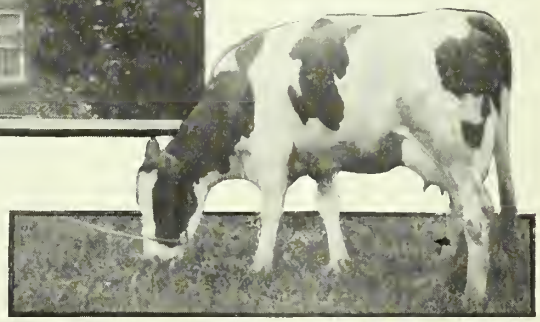
—*Lucy Betty McRaye.*

The Profession of Farming: By ETHEL M. CHAPMAN

Miss Dorothy Richardson holding the Holstein that made an official record of 83.8 pounds of milk in one day.

Another performer in the Riverside herd.

A view of the splendid residence of Mr. J. W. Richardson, of Riverside farm.



How Business Principles are Making Money and Contentment on the Richardson Homestead

Agriculture owes to such men as Mr. Richardson a deep debt of grotitude in the manner in which he has given to farming the dignity of o profession. Being thoroughly imbued with the importance of agriculture and with its usefulness to society, he has sought by every means to make life on the farm ottractive to the women and children, and as desirable from a business enterprise standpoint to the man as that of any commercial undertoking.

IT is one thing to have a farm on which money has been lavished to create a show place and a herd of blue-ribbon cattle. It is quite a different proposition to have the prize cattle and show place combined in a practical farm which has been built up entirely from its own resources by a thorough, far-seeing business management—and work. The J. W. Richardson farm near Caledonia is a well-known example of this type.

Riverside Farm is situated on the north shore of the Grand River. Ever since Mr. M. Richardson began to till the land and add to his acres some forty-five years ago, one of his first principles was to conserve the fertility of the soil and improve his surroundings. Most farmers at that time were selling grain and not a few were eventually selling out. Mr. Richardson was feeding his grain to cattle, selling beef and dairy produce and gradually buying up the vacant farms around him. His herd was made up of pure-bred and grade Shorthorns, but with beef prices such that a good three-year-old steer would sell for only about sixty dollars, the dairy output had to be depended on for most of the profit, and its quality soon won a reputation. Mrs. Richardson and Mrs. J. W. Richardson were both expert cheese-makers and a special market was always ready to take all they could supply. Right here came the reason for turning from a beef-raising business to a purely dairying proposition. The milk supply was not large enough.

After studying the different dairy-breeds, it was decided to go entirely into Holsteins and selections were made from among the best animals of the leading herds of America. With a few valuable additions since, the herd has grown within itself until it ranks among the first in Canada. Where the best cows in the old herd gave from thirty-five to forty pounds of milk a day, they now average eighty-five to ninety, and every mature cow is expected to produce from seventy-five to eighty pounds a day during the period of greatest flow. The records of individuals shown in the illustrations speak for themselves.

Even if monetary conditions had not interfered it would seem that a place with the resources of Riverside must naturally evolve into a dairy farm. It was originally made up of four river lots or about three hundred and seventy-five acres, of which seventy-five acres are bush and shade land, and the field plan is arranged so that in whatever field the cows are pastured they can get to shade and water. Of course they have no access to the woodlot. The water supply is excellent. Besides the natural streams which by the way make artificial drainage unnecessary there are four drilled wells with two windmill pumps. Should the wind fail a gas engine is ready to do the work with no charge whatever, for the sub-strata of this land besides making the earth green with its increase is filling six wells with natural gas. Five of these wells are leased, the other furnishes

A bunch of the Holstein calves at Riverside farm. Such a group constitutes one of the joys of purebred dairy farming.

power, heat and light for the barn and house.

A LOVER OF ALFALFA.

The soil here is clay loan, and its whole business object is to produce feed for cows About 125 acres are planted to alfalfa and forty acres to other grasses. Mr. Richardson's father started to grow alfalfa about forty years ago and they still consider it the cheapest feed they can grow for either a milk producer or flesh former.

"We used to keep sixty head of cattle and buy hay," proudly tells Mr. Richardson. "Now we keep around one hundred head, carry over about forty tons every year and have hay to sell. We are not only growing two tons of alfalfa where before we grew one of timothy, red clover or alsike, but we are growing a feed twice as rich in protein. If the second crop is used for pasture we are careful to take the cattle out before the field is damaged by close cropping. Where there is likely to be June grass or blue grass we sow two pounds of red clover and one of timothy with fifteen of alfalfa to the acre. But the worst enemy of alfalfa is quack grass. A field to be seeded should be free from this, should be plowed well in the fall and drained, usually cleaning out the cross ditches with a scraper and top-dressing through the winter with barnyard manure. We like to use home-grown seed as we know it is adapted to local conditions, and we do not sow alfalfa on low-lying spots or where fall wheat has killed out. These are seeded to alsike.

"The rotation usually followed is alfalfa after corn, oats or barley, plowing immediately after the grain crop has been harvested to destroy couch grass. The alfalfa is cut early the first year to destroy weeds like sour dock, and thistles before they mature. This is less work than summer fallowing, it cleans a field better, and every acre of the farm is growing grass if nothing else."

About twenty-five acres are usually planted in corn, sixteen in wheat, forty in oats and twenty in barley, the cheap feed for the cows being alfalfa, ensilage, and mangolds with a meal ration of bran, crushed oats, wheat chop and sometimes shorts and barley. As the quantity of meal feed is lessened the alfalfa is increased, but from the end of the lactation period meal is fed liberally to get the animals in condition for freshening.

There are three silos on the farm, one, a square structure of single boards, being the first built in the county, and the last one put up a fine-looking affair of cement blocks, that will last for generations. A good supply of summer silage is kept over to be on hand for seasons of poor pasture. A cheap and excellent molasses meal is prepared at home from pure cane molasses and barley combings or dried sprouts from the brewery, about four quarts of molasses being given to sixty head of cattle at one feeding.

CARE OF THE CALVES.

To the farmer who raises cattle for the sole purpose of getting a supply of milk, valuing the calves only as a by-product, or even for beefers later on, the care given the little animals at Riverside may seem a bit luxurious, but we have to consider the aristocracy of these calves and the amount of money wrapped up in the little black and white hides. They always have clean stalls, clean mangers and clean pails —the pails are scalded out regularly so there are no calf troubles. For the first month they are fed on new whole milk. Then they begin to eat meal of rolled oats and bran. At two months they are fed a little ensilage and after this they get new skim milk instead of the whole milk. A good "cream equivalent" that Mr. Richardson has found most satisfactory is made by mixing 75 pounds of oilmeal, 20 pounds ground axseed and 5 pounds charcoal, ground in the chopper. About a quart of this is cooked with a pail of water to make a thin gruel, and divided among twelve calves. It is stirred into skim milk or water for feeding. It might be mentioned here that the food is cooked on an ordinary kitchen gas stove in feed room.

Another interesting thing about these quarters is the arrangement to prevent the calves prolonging their feeding time by chewing each other's ears. Each calf puts its head through a "baby stanchion" to reach the pail, the stanchions are closed and after drinking, a little dry meal is put in the manger. When this is eaten they seem contented with chewing their cuds.

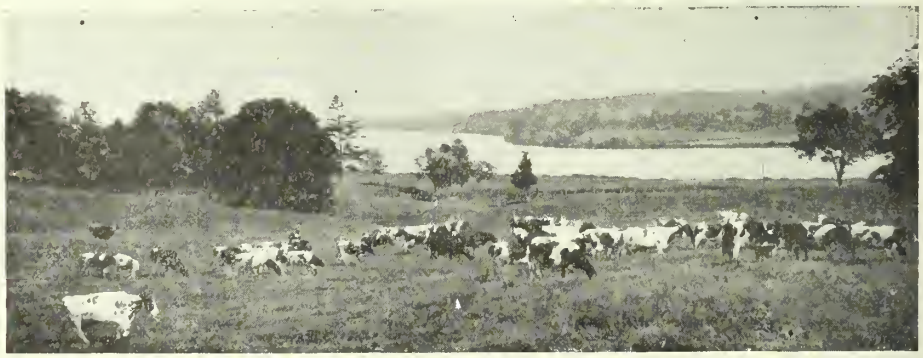
HOW THE STABLE WORK AND MILKING IS DONE.

To milk forty cows a few years ago would have required a little army of hired help. Now the gas engine driving the air pump runs the milking machine and does most of the work. "We found that it would save expense and labor to grind our grain at home," said Mr. Richardson, "so eight years ago we installed an 8-h.p. gasoline engine. A 6-h.p. would have done but we wanted one big enough not to be stuck. With this it didn't cost any more than to run a milking machine, and it just cuts the work in half. In a pinch one or two can do it."

And it's worth going to Caledonia to see it done. When everything is ready the milk pails are scalded with water heated on a gas stove in the milk-room. The milking machines are taken from a covered tank where they are kept in lime-water when not in use. Just back of the engine-room is a well, and if the windmill isn't working the engine can pump water, and run the grain chopper, milking machine and separator all at once. Part of the whole milk is fed to the young calves, part is sold to the milk factory, and part is separated to get skim milk for the calves and the pigs. All that is not fed is taken directly from the barn to a milkhouse and kept in a tank of running water. This water comes from the main supply tank and runs off to a trough for the stock. "We used to have our cold water tanks for the milk in the barn," Mr. Richardson explained, "but even though it was isolated and cement-lined I got the idea that the milk might become tainted when we were feeding ensilage." Ice is used throughout the summer—in fact, Mr. Richardson considers a good ice harvest one of the important farm crops for use in the house, as well as in the dairy. A tank of clean water and the heating apparatus in the milk room make a quick and thorough job of washing up the milk things.

SAVING LABOR ON THE FARM.

In all the stable work careful planning has been done to save unnecessary labor. The litter carrier was one of the first



The cows on the pasture at Riverside farm showing the Grand River in the rear.

The principle of Riverside farm has been to turn the profits back into the farm. Thus we have the beautiful residence with windmills, fine barns and beautiful grounds. A waterworks system, up-to-date furnishings in the house, a baby grand piano, and gas grates, are incidents of this fine country home.

used in Canada. A covered manure shed is built just back of the cow stable and all through the winter the manure is spread on the fields. It is not considered economy to try to cut down the whitewashing. A disinfectant like lime used freely may save a lot of money and work later.

While the building up of a dairy herd that has few equals in the country has been the greatest achievement of Riverside, every department of mixed farming seems to be carried on, and carried on very thoroughly. They even find time to take care of eighty hives of bees. All top-supers are used so they don't extract from the brood chambers. The orchard and garden, too, are among the attractive features of the place. It was not the champion herd of black and whites alone that made Riverside the prize-winner for three successive years in the Western Dairy Farms' Contest, and finally in the provincial contest three years ago; the well-balanced management of every department of the farming operations had something to do with it.

Mr. J. W. Richardson, present proprietor.

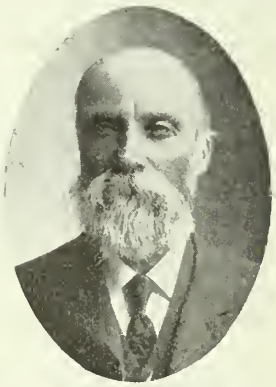
KEEPS MARRIED HELP.

To keep up a place like this we might naturally expect a big problem in securing and handling the hired help. Mr. Richardson has simplified this by having married men live on the farm. Across the lane from his own home he has put up a double house, a very pretty building of frame and shingles, and on the other side of the farm there is a full equipment of buildings, a cement-block house, silo, and barn. He keeps the young cattle and horses here, but the milking cows are all under his personal supervision. The boys who help take care of the stock seem as interested in the business as he is himself.

A good deal of the way proceedings run on oiled wheels here is due to the business system in the management of the whole plant. A few minutes in the office with its filing cabinets, roll-top desk and typewriter would convince anyone of this. Of course the furniture might not mean anything, but the filing of records and registers with photographs of the individuals, and the direct and simple system of bookkeeping, can tell the whole story of the year's work to date any night. There is nothing confusing or complicated about the books, and only two sheets are required, one for resources and incomes, the other for expenses. It requires only a little addition to tell just where you stand.

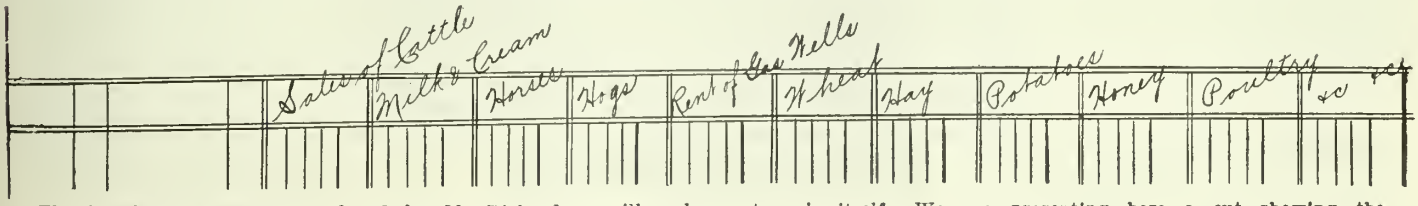
Mr. Richardson has some views of his own on the subject of where farm incomes come from. He reckons in substantial figures the salary his wife's work and management would bring if it were invested anywhere else.

The principle of Riverside farming has been to turn the profit back into the farm rather than to invest it elsewhere. This system began a long time ago and one need only drive past the place to see results. The fine wood lot, pasture grove, and tilled fields, the row of maples on either side of a lane running through the center of the farm, the mile and a half of spruce hedge with maples along the roadside and the orna-



Mr. M. Richardson, the founder of the Riverside herd, at present enjoying life in Caledonia.

Continued on Page 88.

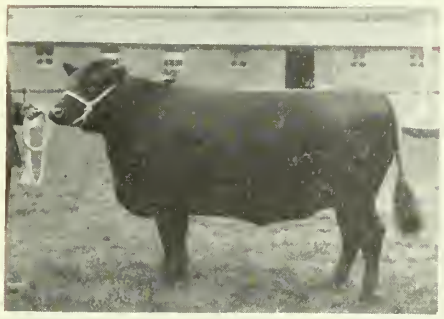


The bookkeeping system employed by Mr. Richardson will make a story in itself. We are presenting here a cut showing the columns in his cash book which enables him to spot losses at once.

The Man In Salesmanship

The Farmer Who Makes Good Sales Must Have Quality Behind the Goods. The Public Clamor for Farm Products

By F. M. CHAPMAN



The champion two-year-old Angus at Glasgow, Scotland, 1914.

GREAT importance is laid upon salesmanship by all business concerns to-day. Schools, for developing expert salesmen, have sprung up everywhere. To know how to sell, is a business that brings big salaries. Selling one's productions is the mainspring of business. Let sales slacken and at once the factory wheels slow up. Money grows tight at the banks. Labor troubles brew and depression glooms in the cities.

That is why the big manufacturers advertise so extensively. They know that this is part of the selling plan. To convince people of their needs and of their firm's power to meet that need, is a big step in the sale. The traveler or storekeeper becomes then merely a distributer to the clamoring people.

In the farmer's case it is a little different. His time is largely taken up in producing. He depends upon the energies of business and the demands of localities for his main sales. As a rule he spends too little time on the selling end of his products.

A wise man recently made the statement, that the modern farmer's real work began only after the goods were in his barn. The pioneer's paramount anxiety was in the stumping process. To-day it is in the stamping—of quality on his productions.

It is not good salesmanship to sell a poor thing well. That is trickery! Rather is it the selling of a first-class thing better than the ordinary price. This is being done by many farmers to-day. For example, look at the egg circles, with their guaranteed goods. The apple-shippers with their wrapped 108's, or the butter-makers with their waxed paper pounds, all evidences of the newer salesmanship.

LOST HIS HOG PROFITS.

I have seen the farmer lose big interest on his money in a hog sale. The drover, eager and well-informed, comes into his barn and buys ten hogs from his pens, at $40 below market prices. The farmer was a victim of poor judgment and was a poorer salesman.

A characteristic Northern Spy apple. Guarantee these in your pack and there is no telling where the demand will run to.

The wool-grower, unacquainted with the conditions of the world-wide movements in wool and the demands of the new woolen requirements, sells to the first buyer and misses three cents a pound or $10 on his farm flock.

The fruit-grower just as often falls down on the sales end and thereby misses the fruits of his labor. In many cases it makes the whole difference between success and failure.

The Co-operative Fruit Growers have caught this spirit of salesmanship and have proven the advantages of paying a manager to know foreign markets and to make sales. As a result the farmers of one county in Ontario received $2.20 per barrel net for all their apples this past year. The buyers offered these same farmers $1 per barrel in the fall.

A champion Shorthorn at Glasgow, 1914.

Rising Tide, the first in the three-year-old Clydesdale class at Ayr, Scotland, 1914.

Cattle-feeders know what good buying and good selling means. The shrewd farmer, with his knowledge of continental conditions of livestock and future needs, goes to the stockyards and buys a bunch at $7 per cwt. These are short-keep heifers and when prices go up in the midsummer scarcity, resells for $8 per cwt. and so comes out on top. Another farmer buys and sells in the wrong time, so that even a good gain of flesh on the animals does not offset the drop and his profits shrink accordingly.

There are many ways of making our goods attractive to the purchaser. Honey put up in neat, labeled boxes is in big demand. Our city dwellers will pay big prices for appearance and evidences of quality. Cartons with a dozen apples; boxes with a bushel of uniform quality; eggs stamped and guaranteed; dressed fowl in crates with correst information as to feeding and age; vegetables in cartons, etc.—all these are avenues for money-making returns.

THE SMALL POTATOES TYPE.

These ideas are gaining way slowly. Too long has the old idea of small-potatoes-in-the-bottom-of-the-bag held sway. The regeneration of farm ethics is slow. Farmers are conservative business men. So the new wealth comes slowly.

In FARMER'S MAGAZINE in each issue are presented examples of some men making big money by giving the people service. One man sells $18,000 annually of Campines because he gives people what they want. Another man makes $5,000 on ten acres by catering to the many wants of a fastidious public.

Our farmers, whether wheat-growers, fruit-growers, stockmen, or gardeners, can make more money by studying service. And when one gives service to his fellowman, he is selling his goods well.

Continued on Page 88.

Tempering the Hail Losses

Co-operative Hail Insurance in Saskatchewan Makes a Good Year's Showing

By W. A. CRAICK

The provincial Government of Saskatchewan through its Minister of Agriculture has done much for the farmers of that province. Its problems are peculiar to itself. The farmer of Ontario and of British Columbia has a different condition to meet and cannot appreciate the importance of such a thing as the Hail Insurance Act. When the prairie farmer has labored hard for several months to produce a crop of wheat he has often been rendered penniless by a destructive hail storm at harvest time. It is to meet these losses so as to ease the burden and render business conditions more stable that the Government introduced this Act. It has now been in operation a year. The readers will be anxious to know how it has worked out. Mr. Craick, a well-known writer, was commissioned by Farmer's Magazine to visit the province and make a report, which he has done in this article. The satisfaction of the Hon. Mr. Motherwell on its working out will be noted in another article.

INSURANCE against the ravages of hail storms is one of the primal necessities of Western agriculture. Sweeping across the prairies with incredible violence, these destruction-dealing disturbances of nature, level and destroy the most promising crops and wipe out in a moment the slowly accumulating wealth of years. Nothing more disheartening could be imagined than the havoc occasioned by one of these visitations. Settlers who have spent their all in raising a crop and who in the morning view their waving fields with pride and satisfaction, are often called on by evening to mourn the complete destruction of their present prospects, and their future hopes.

Many efforts have been and are being made to provide against possible damage from hail storms. All sorts of insurance schemes have been devised, some good, some bad, and some indifferent. Private companies have been active. Co-operationists have tried experiments. Even Governments have taken a hand in the matter and have attempted to reach some satisfactory solution. But the story up to the present has been one of many discouragements. There have been failures galore and so few successes that the situation has come to be regarded by some as well-night hopeless. The absolute uncertainty of the storms, the lack of statistics covering the disturbances of many years, the difficulty of levying a sufficiently heavy rate to cover losses, all these have contributed to make the problem a very difficult one.

While it would hardly do to pronounce on the ultimate result of any experiment after only one year's experience, there are those features about the latest scheme of hail insurance that commend it to one's favorable attention. This is the system adopted by the Hail Insurance Commission of Saskatchewan. Their plan has now been under trial for a year and it has emerged from the ordeal in a gratifying way.

Twenty-five years ago a young homesteader laid before Premier Greenway of Manitoba a scheme of insurance whereby each rural municipality in the province should be required to contribute a sum of money to the provincial treasury to be used to recoup agriculturists of the province for any loss which they might suffer from the destruction of their crops by hail. Premier Greenway viewed the proposition with a good deal of interest, but opposition from the companies doing a hail insurance business was so strong that it was impossible to carry legislation for the purpose.

A few years ago the same man, who had become in the interval a citizen of Saskatchewan, proposed the same solution of the hail insurance problem before the Grain-Growers' Association of the province. It was taken up by the association with its customary energy and the Government were requested to legislate along the lines suggested. As a result, the Hail Insurance Act of 1912 was passed and the Hail Insurance Commission of Saskatchewan started operations the following year. The chairman of the commission was very fittingly the person who had conceived the scheme, Mr. J. E. Paynter, now of Regina.

The underlying idea of the whole system is to spread the loss over the entire taxable area of the province. By this means the rate is reduced to its lowest possible limit and every farmer who suffers loss receives an indemnity. In actual practice, however, it is impossible to tax the whole area of the land. The principle of local option has had to be admitted and only such rural municipalities as vote in favor of entering the scheme are required to contribute. Such as do elect to join, do so in their entirety and are regarded as a unit, despite the existence of a minority opposed to the measure.

The Hail Insurance Act called for the co-operation of twenty-five municipalities, signified by the passing of by-laws at the annual municipal elections, before a commission could be appointed and the Act brought into force. It was felt that at least an area of land equal to that contained in twenty-five municipalities should be taxed before the scheme could be successfully undertaken. As a matter of fact a great many more than the requisite twenty-five approved the by-laws and when the scheme went into operation there were no less than one hundred and fifteen in the organization.

The commission consists of three members appointed by the Lieutenant-Governor-in-Council. The first, who acts as chairman, receives office direct from the Government. The other two are nominated by the reeves of the several municipalities co-operating in the measure, the one receiving the larger number of votes holding office for two years and the other for a single year. As soon as their terms expire, the reeves in annual meeting assembled, nominate their successors.

Fairly wide powers are accorded to the commission. It is

A man may cultivate well, but nature, in a few moments, can, in a hailstorm, destroy the crop. That is why the Hail Insurance Act of Saskatchewan has worked so well its first year.

authorized to do all acts and things, to execute all deeds and instruments and to prosecute and maintain all actions and suits at law which in its judgment may be considered necessary to carry out and give effect to the provisions of the Act. This involves the power to borrow money and invest any reserve or surplus funds that may accumulate in their hands.

The duties of the commisison, as set forth in the Act, are equally important. It receives, adjudicates upon and determines all claims for indemnity; receives and distributes all moneys collected for the purpose, and makes all necessary regulations for the enforcement of the Act. It appoints and controls the inspectors who are needed to inquire into claims. Finally, it is required to submit to an annual audit of its books, following which a full report of the year's business must be prepared and furnished to the municipalities concerned.

The procedure when any municipality desires to join the hail insurance scheme is quite simple. Either one of two courses is open. The council of the municipality may resolve on its own authority to submit a by-law at the next annual election empowering the municipality to engage in the undertaking, or, if the council is inactive or unwilling to do this, it may be compelled to take the step when petitioned to do so by at least twenty-five per cent. of the resident ratepayers of the municipality.

Only those persons can vote on the by-law who are assessed as the owners or occupants of lands or as owners or occupants in respect of their interest in lands situate within the municipality, except property within the limit of any hamlet or lands held under grazing lease from the Dominion of Canada. If a majority of votes is cast in favor of the by-law, the council of the municipality is required to pass the by-law and notify the Minister of Agriculture to that effect. Upon the announcement of the minister's approval the legislation at once goes into effect.

The effect of the passing of the by-law is to impose a special tax on all assessable land, except land lying within hamlets or land held under grazing lease from the Dominion Government. The rate of such tax is fixed annually by the Hail Insurance Commission, but it is provided by the law that this rate shall not exceed four cents per acre. There is provision made for residents to withdraw certain of their lands from the operation of the Act, such for instance as grazing or hay land inclosed by a substantial fence in good repair or an unpatented quarter-section on which there are less than twenty-five acres under cultivation. With these reservations, however, all the land in the municipality is taxed and the amount collected, less two and one-half per cent. to cover various local expenses, is turned over to the commission. There are, of course, various stipulations regarding date of payment, penalties for non-payment, interest on payments, in arrears, etc. The amount due by any municipality to the commission under the terms of the Act is regarded as a debt and may be recovered by action in any court of competent jurisdiction in the province.

Having secured the money raised in this way by the municipalities, the commission is ready to deal with cases of loss from the ravages of hail storms. The time limits between which redress is possible are the sixteenth day of June and the fifteenth day of September, both days inclusive. If damage is done at any time between these dates, the owner or tenant or his representative must, within five days, send by registered letter to the secretary of the commission in Regina a formal notice, witnessed and verified by a neighbor, showing the number of acres damaged, the percentage of damage done, the claimant's interest, if any, and the interest, if any, of any other person in the crop.

Immediately on receipt of the notice the secretary apprises one of the inspectors who inquires into and verifies the report, securing, whenever possible, the written concurrence of the claimant, in the award made by the inspector. Each claimant is entitled to receive from the commission an indemnity of not more than five cents per acre for every one per cent. of damage he has sustained over or upon his area of injured crop. No indemnity is paid, however, for any damage less than ten per cent. of the crop upon the hailed area. Losses are paid before the fifteenth day of December.

As a municipality may of its own accord decide to enter the scheme, so it may of its own free will withdraw. This can be done by any twenty-five per cent. of the ratepayers petitioning for the putting of a by-law authorizing the council to withdraw. Should the number of municipalities co-operating fall below twenty-five, the number required to start the commission, the business must needs be wound up.

THE MINISTER'S SATISFACTION

A special message to Farmer's Magazine on the working out of the Act by Hon. Mr. Motherwell, of Saskatchewan—

"This system of hail insurance was tried out for the first time last year, and, like other new legislation, was more or less of an experiment. After one year's operation of the Act, with the natural mistakes incidental to the organisation of such an immense undertaking, out of 115 *municipalities who voluntarily came under the system only three municipalities withdrew, while* 12 *new ones came in. This would seem to indicate the almost universal satisfaction with the scheme under which over* $750,000 *were paid out last year as indemnity for hail losses. It is without doubt the cheapest form of insurance yet devised for this purpose, and I see no reason why it should not continue to grow in favor until practically the entire province is covered by it."*

The first year of the commission's operation was a severe test of the soundness of the system. Out of 115 municipalities paying in to the central fund, claims had to be met in no fewer than 97, a most unexpectedly large number. One very severe storm produced 1,200 claims within two and a half days and the office of the commission was literally flooded with notifications of damage. The following week no less than fourteen inspectors were at work examining into claims and adjusting indemnities. Notwithstanding the excessive damage, the commission was able to hold its head above water, though the margin between receipts and disbursements was not very large.

The financial statement summarizing the results of the first year's work was recently published. It showed taxes received of $652,424.25 and claims paid of $625,488.03. There were still some taxes in arrears bringing the total available income up to $788,389.50, but at the same time there were awards unpaid amounting to $126,472.62, so that the actual credit balance was only about $36,000, out of which had to be paid inspection expenses, salaries, office expenses, etc. This reduced the surplus to $10,691.91, which under all the circumstances was a highly creditable showing.

Several more municipalities voted to join the commission last winter and this season the protected area will be considerably larger. There have been practically no defections and it looks as if the scheme had been heartily indorsed by the farmers of the province. Those who have experienced the benefits of the system are loud in its praises, finding that their claims were promptly investigated and payment of the amount awarded them made without undue delay.

The system has not superseded the private insurance companies, which are still doing business in the province. Many farmers do not consider the five dollars per acre protection afforded by the commission, sufficient, and go to the regular companies for extra insurance. Besides which there is a good deal of the province still outside the scope of the commission. Even from these outside municipalities hundreds of claims were filed, but, of course, the claimants had to be told that, as they were not taxed, they could hardly expect to be indemnified from the commission's treasury.

Altogether it is an interesting experiment and it will be well worth watching how it works out over a number of years. From the first year's experience, the outlook would seem to be very hopeful.

THE COAL FIELDS OF THE ANTARCTIC.

Prof. Edgeworth Davis, lecturing before the Royal Geographical Society, stated that he did not believe the world as yet realized the scientific as well as the commercial importance of the great coal fields which Sir Ernest Shackleton discovered at the head of the Beardmore Glacier, and which in a small strip contain probably as much coal as exists in all the unworked coal fields of Great Britain.

The Locating of Water

The Art of the Dowser, as Told by an Old Countryman

By E. O. MITCHELL

Considerable attention has been drawn during the last two years in Canada to the question of locating water by means of the crooked stick, or by the "Art of the Dowser" as the writer of this article calls it. A great many people are sceptical about anybody being able to tell of the source of under-current water in this way. The writer being an Englishman and a graduate of Oxford University gives what he knows to have happened in the Old Country.

"DOWSING" is an obsolete word in its original sense, meaning "to strike on the face," but the word "dowse" was used not so long ago by Bailey and Smart in their dictionary as a noun, "a blow on the face." The instrument used—in most cases a simple fork of willow or hazel—strikes on the "face of the earth," or, to be more correct, it seems to endeavor to do so, and this may possibly have given the word its meaning. At all events, this art of finding water has long been known and practised in a great many civilised countries.

It is somewhat curious that not much is said or known about it publicly, but it would doubtless astonish sceptical minds to know how extensively water-finders are employed, both in England and America by railway, mining, agricultural, and other large corporations, before undertaking deep or expensive wells.

In one of the South-Western States, a city of some 25,000 inhabitants was desirous of a good municipal water supply, and employed a professional water-finder, who drove his pegs at several points on very high ground, far above the city level, and a mile or two distant. He could locate none on the wide flat valley in which the city lay. The city fathers smiled contemptuously, and his results were rejected: they then proceeded to carry out borings on the flat, at an expenditure of $60,000; but with what result? They simply got a lot of muddy surface soakage.

Then perceiving they had made a big mistake, they went up on the mountain plateau and started boring operations close to one of the pegs above mentioned. The result was a permanent supply of excellent water at comparatively small expense. Nor was this a mere coincidence. It is quite true that success does not always attend every experiment of the water-finders, but the great preponderance of success over failure, beyond what chance could possibly account for, establishes beyond doubt the genuineness of these truly remarkable phenomena. It is a strong corroboration of the authenticity of the dowser's art that one dowser, following another later on, will invariably mark the same spots, although completely ignorant of the preceding experiments.

A company at Haddington, Scotland had decided to put down an artesian bore at a considerable distance from their premises, but before doing so they resolved to make trial of a dowser. The latter duly arrived and started over the ground at a fair speed, with the palms of his hands toward the ground, without even the willow or hazel twig. After proceeding some distance he marked a "water spot" close to the company's new maltings, and then proceeded over a strawberry field belonging to the company. At about 70 yards from where he located the first spring he located another, and, furthermore, he guaranteed that from either of those springs the company would get a supply of about 20,000 gallons per day at a depth of from 100 feet to 150 feet.

The company put down a four-inch bore at the first spring, and at a depth of 102 feet they got a supply of nearly 100,000 gallons per day.

Now, this boring passed through the following strata:—20 feet sand and gravel; 6 feet boulder clay; 19 feet fireclay; 45 feet sandstone and "faikes" in alternate layers; 8 feet marl; and finally sandstone to depth of bore at 103 feet. The bore hole was about 100 feet above sea level.

Another firm in the immediate neighborhood, which bored without the aid of a dowser, sunk to a depth of 660 feet, but failed to find water, and finally abandoned the undertaking altogether.

Then there is the case of the Cheltenham Steam Laundry, Gloucestershire, England, in 1896, where a professional water-finder was employed. Taking one of his small, slender twigs, he held it in front of him with one end of it in each hand, about three feet from the ground. He then commenced to walk slowly in a straight line across the field. Suddenly the twig gave a turn in his hand, began to revolve, and continued to do so while he remained within a certain area. There were two directors of the company present, and one of them, a Dr. Cardew, then walked over the spot with the twig in his hands, but the twig absolutely refused to even so much as make a move. Mr. Chesterman now placed his hands on the doctor's wrists, when the simple apparatus immediately began to revolve!

Water has often been found in large quantities only a few feet removed from a dry well.

In the same county there lived a retired military officer, Lieutenant-Colonel Taylor, who was desirous of obtaining a water supply for household and other purposes. He employed a dowser, Mr. Tompkins, who went over the ground and marked some points for boring. A few days afterwards Mr. Chesterman, who happened to be in the neighborhood, was asked by Colonel Taylor if he would go into his garden and try to locate a stream already found by Mr. Tompkins. He willingly consented, although it was a very dark night when they went out. He then crossed the ground traversed before by his predecessor, and stopped at a place where he said there was water. "I put down my hand," says Colonel Taylor in his report, "to mark the place with a peg, when it came into contact with the end of the peg which I had previously put in to mark the spot Tompkins had selected," and he adds, "it was much too dark for either of us to have seen the pegs, even if we had searched for them."

A CASE IN IRELAND.

In the green isle of Erin there is a place called Thomastown, in County Kilkenny, of which Rev. Father Roe was parish priest a few years ago. This gentleman was seeking a good water supply for the convent, and employed a Mr. Wills to come over from England to Ireland to assist him in accomplishing his object.

The dowser looked at a site already selected as a likely place, and tried his rod, but advised its abandonment, as there was only a very small ripple, and that at great depth. He then went over the whole ground with his rod, and, after marking several places, finally selected a rather elevated spot in preference to the others, where he said water would be obtained at about 80 feet and so many gallons per hour.

By a singular coincidence, Mr. Jones, another dowser, arrived on the scene shortly afterwards, accompanied by a mutual friend, an inquirer, and Jones was invited to have a try also with his rod, and this was the result:—He pointed out the exact spots indicated by Wills, and traced the water in the same line as Wills had done; but he could not tell the depth

or the quantity, though he was certain there was a strong current of water. These men, be it noted, were quite independent of one another, and Jones knew nothing about the coming of the English dowser, or what he had already done. A boring was made, through rock, to a depth of 75 feet when sufficient supplies of water were obtained. The priest, in a letter to the editor of the *Irish Times*, Dublin, said: "This divining rod is certainly no sham, and I cannot explain its influence on some susceptible people when they come over or near water."

SOMETIMES CLOSE TO DRY WELLS.

Near Shanklin, Isle of Wight, England, the local board, on the advice of engineers, sunk a well to a depth of nearly 500 feet, but failed to find any water, and discontinued boring. A dowser called Mullins was then employed, and he pointed out three spots in less than 100 yards of the well where he said there was plenty of water. On the strength of this assertion borings were made and ample supplies of water obtained. In several instances dowsers' pegs were put down quite close to deep dry wells, and sometimes between these useless holes, and water was found in great quantities, often at one-half or even one-third of their depth.

The question which now arises is—What is the explanation, if any, of this art or faculty? Several explanations have been attempted, which have not thrown much light on the matter, such as—Various hints unconsciously absorbed by the operator; hyperaesthetic discernment of surface signs, etc., etc., which, I think, may be dismissed at once as utterly insufficient to account for the phenomenon. It appears to be the result of some kind of transcendent discernment possessed by the operators which other individuals have not got, or, at least, have not developed. It is to be observed that in most of the cases the dowsers were able not only to locate the water, but to approximate its depth very closely, and also the quantity. This faculty seems to be akin to that subconscious perceptive power commonly called clairvoyance or second sight, which may, provisionally at all events, be taken as the explanation of the successes of the dowser, which are certainly inexplicable on any grounds at present known to science. It is only recently that any intelligible explanation has been possible, since the establishment, beyond question, of the entity of the subconscious self with its connection beyond our apparent physical limits.

Certainly, to judge from the extent of the claims of the various professional dowsers, and, still more important, the testimonials as to their success from well-known landed proprietors, companies and corporations, etc., who have employed them, we are justified in concluding that, whatever be the explanation of the fact, the waterfinder's occupation is a genuine one, no fraud or sham. Out of hundreds of authentic cases on record, only 8 per cent. were failures, and even these may not really be failures, for, as we do not fully understand the factors employed to produce the visible results, nor the conditions and possible prohibitions encountered, we cannot determine what unknown factors may not interfere with what otherwise would prove successful.

Professor Barrett, Royal College of Science, Dublin, has dealt with the whole subject in a most exhaustive manner in his work, "On the So-called Divining Rod." This work has the high character of all the work of this distinguished man of science, who, in the prosecution of his investigation, spared neither time, labor, nor expense; it constitutes a veritable mine of information on this important and interesting subject.

What Do You Know?

Questions for Discussion and for Finding Out to Our Satisfaction Just How Much We Really Know About Farm Work

By A DISTRICT REPRESENTATIVE

WHAT five varieties of apples are best for commercial orchards? Which most nearly combine these qualities—high and continuous yield, high market value, freedom from infection, early maturing of trees?

What are our best filler varieties?

Is the planting of fall apples in your locality to be encouraged?

If you were going to set a three-acre apple orchard, would you set Duchess? If so, how far apart,

Is it better to plant out apple trees in the fall or spring?

Which is better, one- or two-year apple trees, for planting a new orchard?

How high should we head our apple trees?

What is the best protection for young trees against mice in winter?

Does low heading of trees cause early bearing, and does it shorten the life and production of the tree?

What stocks are advisable in top grafting to Northern Spy in your district?

If a farmer wishes to set out 10 acres of orchard, what variety should he plant? and what distance apart should they be? How many varieties should there be in the orchard? Are six too many?

What is the danger attendant upon the present extensive planting out of young orchards?

Which is the better time to plow orchards—fall or spring?

What commercial fertilizer is best to use in a bearing orchard?

How much fertilizer to apply and at what time?

Which is of more value to a bearing apple orchard, dollar for dollar, barnyard manure or commercial fertilizer?

Will scions from red fruit set in a tree that bears green fruit give good color?

What spray should be used for woolly aphis on apple trees, and when?

Is it wise to dehorn high Baldwin trees?

Has any grower anything to say concerning the use of soluble sulphur compound as advertised by spray companies?

Do results justify the claims made for it by the companies?

Is Bordeaux mixture as good to prevent fungous diseases as lime-sulphur?

What is the best fertilizer to increase the yield of bush berries?

Is dry arsenate of lead just as good as paste?

Does it pay to make our own lime-sulphur solution if we have the apparatus? Is it as good? Will it keep?

Which is the better form of lime to use—ground limestone, hydrated lime, burned lime or Caledonia marl?

Is it harmful in any way to prune fruit trees in the fall and winter months?

Outline a system of dehorning an old orchard and also a method of trimming to prevent young trees ever exceeding a height of 14-16 feet.

Is a light annual pruning better than a fairly heavy annual pruning?

Please discuss the relative cost of home made concentrated lime-sulphur and commercial lime-sulphur.

Is Bordeaux mixture liable to regain some of its lost ground as a fungicide?

Is the railroad worm a serious post in large commercial orchards? How can it be controlled?

Is there any inducement at present for the commercial production of gooseberries in your district?

Tell what to do to combat the aphis more effectively.

Can crown rot be successfully treated? What suggestions would you offer for prevention?

Why are small fruits not grown more extensively in Northumberland and Durham? Are climatic and soil conditions not favorable?

Beefing the Buffalo

The Herds of Buffalo in the Canadian Parks Show that They do Well in Domestic Life

By J. M. CHILDERHOSE

Canada has the largest Buffalo herd in the world. The imported animals cost the Government $250 each. When taken young the bison is easily domesticated. It is wonderfully resistant to disease and can thrive under the most adverse circumstances. From the butcher's eyes the bison is a choice beef animal which dresses out more good salable beef than the average range cow. In our June issue there appeared an article by Mossom Boyd, dealing with the crossing of the buffalo on the common cattle and the results from an economic standpoint.

IT would, indeed, be a vivid imagination that could picture a more ideal hunting ground than that presented by the prairies of the Canadian or American West, even as late as fifty years ago. There is no wild animal more game than a buffalo bull and without a good fast horse and a clear runway a hunter had little chance on the open plain. He would be a daring hunter whom an enraged buffalo bull could not furnish with sufficient excitement.

With the building of the Great Northern Railway across the continent two mighty races suffered—the North American Indian and the lordly bison. First of all it spelt destruction to the animal, which is to North America what the camel is to the desert or the elephant is to India, and with his destruction the red man was deprived of his meat. It was the invasion of the red man's domain. The destruction of the buffalo was not a hunt but a wanton slaughter. Buffaloes were killed by the tens of thousands, not for their pelts or their meat, but merely for the fun of killing. A few of these slaughterers were pelt hunters, but in the majority of cases carcass, pelt and all was left to rot on the plains. Thus five millions, the estimated buffalo population of the plains, were slaughtered within a comparatively short time. The building of the Canadian Pacific Railway through the Canadian West made the slaughter almost complete. Were it not that the Canadian Government stepped in, it is almost safe to say, that in Canada at least, the buffalo would now have belonged entirely to the past.

It is with a feeling of pride that Canadians to-day can state that Canada owns the largest buffalo herd in captivity in the world, as well as the largest number of wild buffalo roaming in their native haunts and protected from the hunter by men in the service of the Canadian Government. Canada's first step in that direction was in 1897 when the Federal Government appointed itself foster mother of the American bison, with a view of saving the one-time monarch of the prairies from extinction and since then Canada's own people and those of other countries have applauded the work. In 1897 the Government received three beautiful Texas buffaloes, the gift of Mr. T. G. Blackstock. This gift was supplemented in the following year by thirteen fine animals of all ages, from Lord Strathcona, and taken from his herd at Winnipeg. At frequent periods after that additions were made to the herd. The biggest shipment was in 1907 when four hundred and ten buffaloes were brought from the Michael Pablo ranch in Montana. Two years later one hundred and ninety head were brought from the same place and smaller shipments have followed yearly since then. The total number purchased by Canada from that ranch to date is seven hundred and eight. For the purpose of infusing new blood in the herd thirty head were purchased from the Conrad estate at Kalispiel, Montana, in 1910.

Lake Louise, in the Rocky Mountains, Alberta, showing a glimpse of a trail which encircles the lake, and in places was a very expensive undertaking, because the road ditch had to be built up almost out of the water.

The parks in which the buffalo herds are kept are located at Banff, Wainwright and on Elk Island, all in the Province of Alberta. Of these parks Buffalo Park at Wainwright is by far the largest of the three and in is approximately fourteen hundred head is corraled. The great area in this enclosure consists of one hundred and sixty-two square miles. At a cost of $60,000 a galvanized steel wire fence, nine feet in height and consisting of fourteen strands, was built around the park. The fence is seventy-four miles long and seventeen thousand miles of wire, including upright wires, brace or guy wires and division fences, was used in its construction. Twenty-five thousand posts were required. Gates are placed at convenient places to facilitate handling of the herd.

The park is divided into three parts by the construction of two cross fences from side to side. The herd is kept from one of the enclosures during the entire summer to allow the wild prairie grass to attain its full height and growth. A small section of it is reserved for cutting and stacking for use in winter after heavy storms, after which, for sometimes days at a time, the grass is deeply covered with snow. On an average only about one-half ton per animal of the stacked hay is eaten during the winter season. The long grass, saved during

A buffalo in the park at Banff.

the summer, provides natural conditions for the herd. It is only after the most severe storms that they cannot secure sufficient by pawing through the snow for it. Throughout the entire length of the park there is sufficient woodland for winter protection and it is at the edges of these patches of forest that the stacks are built. A twenty-foot-wide strip of plowing surrounds a fire area around the park and during a very bad and extensive prairie fire a couple of years ago, when the flames burned up to the enclosure and well around it the fence and the grass within was found afterwards to have been untouched.

Elk Island Park, the next largest in extent, confines eighty-five head and at the Rocky Mountain Park at Banff thirty-five are in captivity. Thirteen head are loaned to city parks at various points throughout the West, Victoria being one of these. In every case the animals remain the property of the Government, and are loaned only under bond.

There is one particular feature in connection with Buffalo Park at Wainwright in that it has been the natural habitat of bison for centuries. Old wallows, grass-grown and overgrown in some cases with trees can be seen side by side with fresh ones. A boulder near one of these old wallows stands with its sides polished and worn like an ancient tomb-stone from buffaloes of centuries ago rubbing their bodies against it.

But Canada can boast of more buffaloes still, and if one wishes to get a glimpse of the only known wild native buffalo herd it is only necessary for him to take a trip to a point about seven hundred miles north-west from Edmonton and there in the fastnesses of the Rocky Mountain foothills find the buffalo-monarch in his own domain. This wild herd is in the Fort Smith district. A territory of about eight thousand square miles is reserved for them. Although not in captivity the herd is protected by the Government from hunters. Rangers in the service keep an eye to suspected hunters and a man with a rifle within a prescribed area would be regarded by a mounted policeman in about the same light as a tramp with a bag of diamond rings in a back alley in Toronto. The territory over which this herd roams at will is classed as non-agricultural land. It is for the most part forest interspersed with small lakes and rivers and large meadows of luxuriant grass. The bison in this herd, while of the same species as the plains bison, have become different in many ways through different environment. They are considerably larger for one thing and the fur is decidedly finer. These are classed as the woodland buffalo.

A complete record is kept of the park herds. Expert riders are in charge of the herd and every year a general round-up is made and a census taken. All the work is in charge of the Dominion Parks Branch at Ottawa, of which Mr. J. B. Harkin is park commissioner. The policy of this branch is to assist nature so far as it is possible in handling the animals in captivity. It is proposed to single out all the old bulls that become cross and fight almost continually with the younger ones, and place them in a separate enclosure in the park at Banff. The herd already located there is always the centre of attraction among visitors and tourists, many of whom visit the place solely for the purpose of seeing the buffaloes.

A Cattalo, the result of a cross between the buffalo and the cow, as seen on the farm of Mossom Boyd, Bobcaygeon.

But why all this expense on the part of the Government in protecting the remnants of the race? The animals imported from the United States cost the Government of Canada an average price of $250 each. The first answer to such a question is that Canadians would indeed be a people possessed of but little pride in their country and its associations were they to let the historic old monarch of the prairies pass out of existence. But entirely apart from that, every animal is a valuable commercial asset. An average buffalo head is worth all the way from $300 to $1,000 for mounting purposes and on the open market the average carcass would bring at least $100, entirely apart from the value of the pelt. As a food the meat is considered a great delicacy. It is evident, therefore, that the Government made a good bargain.

"Do you believe that this great herd will maintain or even increase its numbers?" was a question put to a high official in the parks branch by the writer.

"I most assuredly do," was the emphatic reply.

"True," he said, "nature is very extravagant. When at one time millions of these animals roamed the plains such great numbers could stand heavy losses and still the greatness of the herds would be kept up."

In the three national parks where buffalo herds are kept there is a big natural increase every year. The animals are counted always at the fall round-up. The round-up must be carefully managed and it must be done at the proper time, otherwise this increase would be interfered with. Frequent weeding and segregation of the old fighters from the herds will now be a regular matter of course. When one of their number becomes too weak and old to defend itself the adult animals in the herd usually see to it that it does not die a natural death. The death of old "Sir Donald," for many years king of the herd at Banff, was a sight to be remembered by the visitors there at the time. The dethroning of this old monarch was the work of some of the younger adult bulls who engaged him in a battle and gored him so badly that he died as a result. These desperate combats, however, are mostly between the males. Experienced riders are continually in charge. They see that all is well with the animals and incidentally they pay particular attention to the fences, for were a large tree to fall across it, or were fires to burn a number of posts the opening would not long remain undiscovered by the animals. The wanderlust in the bison is strong. He dearly loves to roam and his desires would soon assert themselves.

That the bison is destined to become a valuable animal agriculturally is now past conjecture. There is a coming need of his many good qualities, and it only remains for some wealthy individual or someone appointed by the Government to make these qualities available. If taken young the bison can be domesticated as was our common domestic animals, from the horse down to the house-cat. The resistance of the bison to disease is wonderful. Among the animals now confined in the national parks

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A buffalo in a park at Wainwright.

The Coming of Common Sense

There are Three Farmers Everyone Knows Well---the Rainbow Idealist, the Money-Grubber and the Decent Progressive Man. Ten Hours and Human Charity Sufficient for Citizenship

By TOM E. DOBBIN

The great difference between pioneer farming and modern farming is the point to which the greatest individual resource has to be brought to make a success of the business. In the former days, he was called a prosperous man who could do the most work at logging, breaking and building. In these latter days the most successful farmer is the man who can handle best the crops after they are in the barn. Muscle has been discounted and gray matter appreciated with the change of the years. The writer of this article has caught this summing up of the matter in the present article. His advocacy of an athletic center for every neighborhood naturally follows from this argument.

THE farmers who have made good during the last twenty years are the men who have regarded their occupation as a combination of home and business. They have avoided two extremes, either of which spells failure to the person following it. First, there have been the idealists who have more of the fanciful and imaginative than of the practical in their make-up. The eyes of such people are ever turned towards the primrose by the river's brim and finding "in the meanest flower that blows the thoughts that lie too deep for tears!" When the soil was calling for the spring seedling they were studying the distant landscape or counting the hues of the rainbow. In the meantime their debts were unpaid, and strange to say, their rich friends, who had left careful managers behind them while they were out picnicking with their nature-loving country cousins, did not come forward to pay their interest or to lift the mortgage.

The other extreme has been followed by those who have confused living with money-making and who have valued all in the country in terms of dollars and cents. The staple of their thought and conversation has been hog and turkey and clover and fatting cattle or milk production and crop rotation. They have seen in their growing boys nothing but plowmen and in their daughters nothing but milkmaids. The farm home was to these simply a place to sleep and eat. For all the waking hours of the day for seven days in the week for fifty-two weeks in the year it was work and sleep and devour a hasty meal. But this extreme proved to be even more disastrous to rural life than the other. The farmer found that he was not made of iron, but of flesh and blood. Before he was fifty he found himself a broken man. His children had found such a life full and hard and hateful and had left the farm and all its works to those who could or would stand it.

But these have been extremes. Public opinion in the country is not represented by either of these. The jaded horse cannot compete with the animal that is in good fettle; either can the over-tired man do as good work or half as good thinking as the same man can accomplish when he is rested and keen on his job. The new condition is well set forth by the conversation held between a boss and his newly-hired help. The hired man had been engaged at fine wages. He had the reputation of being an unusually efficient man, but as a good understanding wrongs nobody there was a conversation regarding the relations that were to subsist for the following twelve months.

You never see one that is worked to death, keen and alert on his job.

"What hours are you accustomed to work?" queried the new employer.

"Do you see that fellow up there?" asked the farm help pointing to the sun. "I get up with him all the summer and beat him a couple of hours all the rest of the year. I keep going all the time between."

"Not while you are with me," said the new boss. "If you can't earn your wages working ten hours a day for me you can't earn them by keeping at it for fourteen. I want you to get your rest and to use your head as well as your heels."

There you have the new order of things. There is as much hard work done now as ever there was, but it is no longer regarded as drudgery. Of course there are plenty of farmers who keep on the old grinding fashion, but their number is rapidly lessening in communities that fairly represent the progressive farmers of Canada.

REAL WORK BEGINS THEN.

The day was when a farmer was regarded as a successful man who heard the cry, "Produce! Produce!" That has all changed. The farmer who bears the bell among his fellow-agriculturalists is the man who produces quite as much as any of his predecessors, but he regards his work only as beginning when his barns are full and his byres and orchard ready for the buyer. He has learned the necessity of successful marketing and purchasing. He keeps in touch with what the world-market requires and he caters thereto. There is the matter of hog-raising, for an instance. Twenty years or so ago the hog-raiser's ideal was the heavy hog and the fatter the better. The farmer discovered that the foreign market demanded a hog of the bacon type and changed his whole method of hog-culture accordingly.

The same is true of the poultry industry and of the dairy. Further, more and more farmers are finding out that they may follow their products to the consumer. While it is not at all likely that the middleman will be eliminated for many a day to come, the farmer and the consumer are coming closer together. The middleman is coming to act as a reservoir that holds the balance between the day of over-production and the time of scarcity. The middleman takes the risk of doing this and he has the right to be paid for his trouble and risk. The right

A beautiful driver and a turnout, as seen on one farm.

sort of middleman promotes the interests of both the farmer and the consumer. It has in reality been the wrong sort of middleman, the parasitic sort, with whom the farmer has had any quarrel. This latter sort is the variety that the farmers are getting rid of, to the advantage of all concerned.

THE CO-OPERATIVE SOCIETY.

All over farmers are learning to buy in car-lots all commodities that admit of their so doing. Coal, bran, shorts, corn, and kindred materials are purchased in this way with advantage to the consumer. The same holds true of the farmers and the disposal of their milk in the large centers. It is simply a matter of the farmers getting out on their right-of-way and mastering the details of the businesses that affect their welfare. Every year demonstrates that there are farmers who are capable of doing this. These men are no longer content to put their money into the hands of men who have business ability but who lack interest in the farmer's business welfare and who finally succeed in separating the farmer from his cash. Rather, the farmers are winning out by keeping control of their own affairs, by being content to feel their way, and by not expecting high business rewards in a day or a year. Risks are incurred, but they are such risks as their own experience warrants them in taking. They invest, not on the advice of an interested promoter, but in view of what appeals to their own judgment. Experience has demonstrated the wisdom of their so doing.

Further, every year sees an addition to the ranks of the farmers who take pains to sell to special patrons. The patron and the farmer know each other. The merchant takes the farmer into his confidence by letting him know the class of trade he caters to. The farmer responds to this demand. He plants or feeds in view of a market that he can depend upon. The result is mutual satisfaction and profit. Only the farmer who has tried the old hit-and-miss way, but who has adopted the modern method knows the relief that the better way carries with it.

SUPERSTITION IS PASSING.

Still another advantage enjoyed by the Canadian farmer is that accruing from the dethronement of what may be called farming by luck or guess, and the crowning of what may be called farming by experience. The day has not come by any means when bug and pest and blight and the ravages of wind and frost have succumbed to human skill and knowledge. In dealing with such enemies it still behooves the farmer to go cautiously. It must be remembered, however, that the day was when the farmer had no means of fighting the excessive moisture of many low-lying tracts that are now the most fertile parts of the Dominion. When we think of the extreme of drouth we meet an equally serious problem. But tile drainage has been discovered and irrigation has made the wilderness to blossom like the rose. Fever and ague, enemies that many of the present generation scarcely know, even by name, have been brought to heel by modern science, and for this reason whole townships have been made inhabitable. Every season marks some new conquest of the farmer's foes. Science has become the farmer's handmaid. The farmer is by no means lord, in his domain, but every year sees an extension of his control. While he has not reduced his activities to an exact science, he has come to the place where he takes rank with other craftsmen who came to claim to work on scientific principles. He is at least on a par with the navigator and the physician in this respect.

What is of even greater importance still is the plane upon which the farmer's home is now placed. Since time immemorial the country has been regarded as the place of good food and pure air. Yet one does not need to delve into ancient history to find the days when the farmer's house was lacking in many of the comforts that made the city household the envy of those less fortunately equipped. This is no longer the case. Running water, both hard and soft, is now to be found in the average farm house. The rural telephone is now the merest commonplace. Furnaces or hot-water temper the air in winter. The local branch of the laundry takes away a deal of hard work. The beef ring guarantees a supply of the freshest and best of meat in localities unvisited by the local dealer.

WHY NOT ATHLETIC CENTERS.

Along with this goes a rejuvenated rural social life. The free public library brings the best books and magazines with-

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The boy who cares for chickens and bees and has a calf, the proceeds from which go into his own bank, will graduate from these to Holsteins, shorthorns, or other livestock, and make a better man in the community

Land O'Gold:

By JUSTUS MILLER
Illustrated by MISS MARY V. HUNTER

These Fellows have the Viking Blood in Them and They Have to be Shown Right on Their Own Farms. All They Need is a Leader

SYNOPSIS OF PREVIOUS CHAPTERS

Land O' Gold is the name of an Ontario farm in a well-settled district. An only son who is brought up there finds the mortgage and the uninteresting succession of chores and resultless toil, to be a hindrance to his future, and so cuts loose from the farm. He sees it is an education he wants and so decides to attend the agricultural college, but lack of funds drives him into newspaper work at Ottawa. His visions of usefulness are soon destroyed by the sordid grind of the editorial room and he drifts to departmental work only to detest its blank future. At a Sunday School picnic he meets Grace, the daughter of a lumber king, who sets his imagination on fire. Just as he so plans a telegram from his father at Land O' Gold contains fateful news. His father has been injured at a barn-raising and is unconscious when he reaches home. After the death of his father he decides to carry out his wishes to make Land O' Gold pan out. When he would feel discouraged, visions of Grace appeared before him and he felt that he could not fail. He makes a study of farm conditions and decides that proper business management would settle most of the difficulties confronting the farmers of to-day.—Editor.

I WENT to work in the winter at the old orchard; and it surely needed attention, although it was small. There were 117 trees in the block and it covered an area of two and one-half acres. It was probably thirty years old and during the years Dad had owned it had never been cared for. He had taken what apples we used for the house, and the bugs, cows and hogs had got the rest. I think every insect that lived in Ontario had attacked it.

Early in the season I pruned all the dead wood away and all branches that I thought were useless. Then I fertilized it heavily with farmyard manure. As soon as I could get upon the land I plowed it.

"What you doin'?" asked Bill Mason, the day I started to plow.

"Oh just keeping busy," I answered, for the neighbors were watching to see how a book-learned farmer would act.

"Might as well cut 'em down," observed big Bill. "Them trees is a thing o' the past."

When I started to spray with a duplex barrel outfit, I was the joke of the village. But the bark lice didn't see the joke. The lime-sulphur certainly went for them. I sprayed twice more, once just before the blossoms burst and again just after they had fallen. During the spring, I stirred up the soil before and after every rain to conserve the moisture. On the 20th of June I sowed a cover crop of hairy vetch, thirty pounds to the acre.

At first Jake was doubtful of the outcome. But when he saw the way that old orchard came back, he became an ardent disciple of the resurrection plan.

"I believe you're on the right track after all," he said to me one day. Those were the first encouraging words I had received except from Mother and Molly, and I felt tickled I can tell you. Right there I promised myself that I would pay Jake for that some day—and I did.

What about bees or poultry? These are as pleasant to handle as a typewriter.

You would have thought that the neighbors would have been convinced by the results. There were no apples in the neighborhood like mine. But none of them were. They attributed my success to good luck.

"There's nothing to be made outa apples anyhow," advised Bill Mason, sitting aside the orchard fence. "What you goin' to do with them?"

And this problem did trouble me. I had splendid apples all right. They were sure to grade high, but there were ten varieties in that small orchard, with only a sprinkling of Spies, which the market demanded most strongly. But I had a fair quantity of Snows and Golden Russets and they were fancy. With the assistance of the Provincial Fruit Branch I finally located a buyer. He agreed to come and look over the crop—at my expense if he were not satisfied. I can tell you I was on tenterhooks to hear his decision.

"Well you've got the goods all right, all right," he exclaimed, when he saw my apples.

"Say son, when you can grow this quality of stuff why don't you develop the apple business?" he continued looking at me shrewdly. "I can handle fancy stuff at a profit to both of us. Give me carload lots of good varieties and I'll open your eyes. I'll make this a land of gold all right."

He bought the crop and sent one of his expert packers to assist me. From the orchard we put up 290 barrels of No. 1 apples, and 41 of No. 2's. I received from $2.50 to $3.25 a barrel according to variety, the total sales amounting to $1,055. It cost me for barrels and for picking and packing $314.45, and for caring for the orchard $202.60. Thus my net profit was $537.95 or exactly $215.18 an acre.

They were sold in Toronto as fancy apples, and Dan Brown, the buyer, made large profits from them also. But I didn't envy his gain. I was satisfied with the experiment. It was a happy night when Molly and I closed the books, and I think Jake was as pleased as we were, for he had upheld me loyally.

"Can't tell nothing about it," said Bill, when I gave him the figures next day. "Like as not you'll lose next year. Besides you didn't reckon in rent or taxes and didn't allow for lost time, or depreciation in value. Them figures don't show nothing."

But I was not sorry at Bill's attitude this time. He had an old ten-acre orchard on his farm half-a-mile away and I was after it. I had decided to enlarge and I didn't care to wait twenty years until a young orchard should come into bearing.

To shorten my story I rented this orchard on a ten-year lease and Bill agreed to assist me with the work, at a fair price for his horses and men while employed. There were other orchards too that I might rent, on the same terms, but I had to consider finances. The little orchard had paid well, but the spray machine had cost sixty dollars and with the interest to pay on the mortgage, and Jake's wages, we just broke even that year. We had the three thousand dollars of insurance money yet, however. I disliked the idea of taking this for my orchard scheme, but I had confidence enough in its eventual success to propose it.

"I think I see something mighty big ahead this time all right," I argued. "It's a new thing here and there's no reason why it shouldn't go through.

"No! I know there are none who will believe me just now. But mind you I'm young and I've been taught at the Agricultural College. Why that alone is enough to turn all the fellows against me. But there's one thing they won't turn against. That is the money. That will reach all men of every condition. They all want the money and they'll swing around just as soon as they are dead sure they can get it.

AFTER MONEY TOO HARD.

"Yes, Molly, I know you're right enough. They slave and drive too much for money now. But remember they have to do it. They just have to make hard work balance up, in a measure, for lack of management. Give them the money and other things will follow. Then they'll build better schools and homes. They'll mighty soon co-operate, too, when they see a clear way of making money by doing so, and other things will follow that. The love of money may be the root of all evil, but the dearth of it grows mighty flourishing branches, I think.

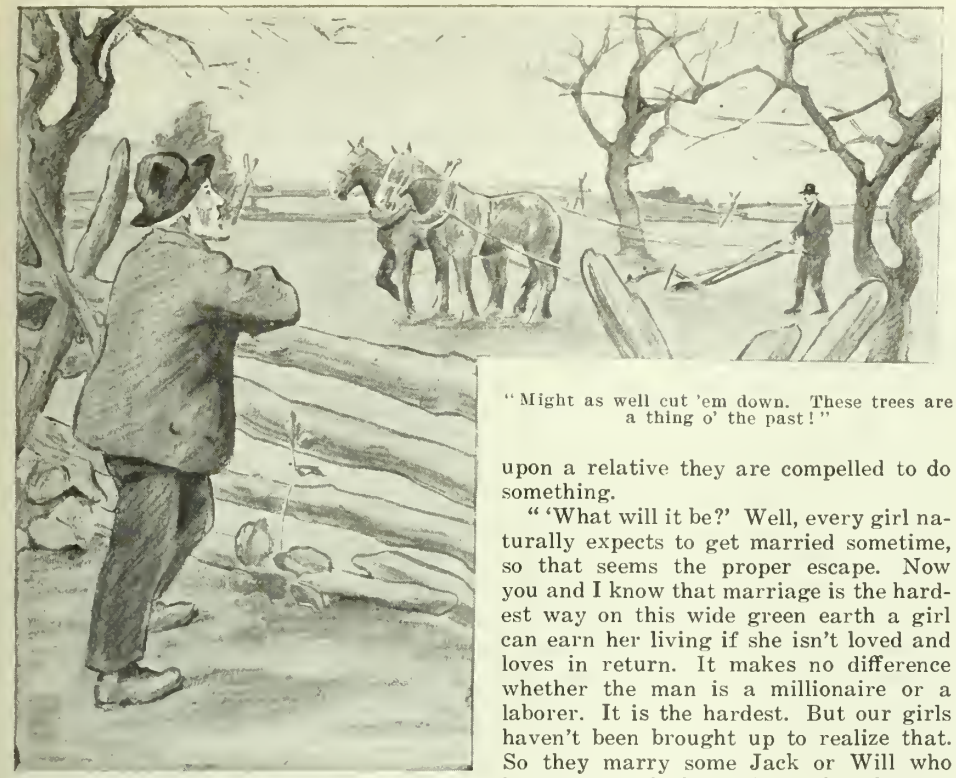
"And then, Mater, there isanother consideration. Daddy worked and hoped for better times. He was a stronger man than I can ever be, but hard days came because he never understood farm management. He came with an idea of being a gentleman farmer. The result was that he lost money every year. But Land o' Gold gripped him just the same. He grew to respect and love these good-hearted boys down here who are living honest lives with mortgages upon their farms. They are rough diamonds all right, but when you get beneath the surface the pure rays sparkle. He longed all his life to bring better times somehow to our community.

"Now I want to carry forward this work as he would have done it. I want to become a power in our county, but I don't want to skin the boys out of everything they have to make good myself. I want to help them out. And I have demonstrated an opening too."

The tears were shining in my mother's eyes when I had stopped. She squeezed my hand, but didn't say a word. She was living over again those early days when we had come so confidently at first to Land o' Gold.

"Oh Jimmie," said Molly very sadly. "Can't you do anything for the women? Your money schemes will help but they can't fill a woman's life. My heart has just grown sick to see the little lives of so many of the wives around us.

"I believe you are in the right track, after all," said Jake to me one day.



"Might as well cut 'em down. These trees are a thing o' the past!"

"They have forgotten to dream dreams. They only live one day at a time. In the morning they arise just for that day, and again for the next, and the next. It's just work and children, children and work, all their lives.

"Yesterday I went over to visit Mrs. Mason. Little Bessie had been out pulling turnips. She's a sweet little girl just twelve years old and her poor little hands were cold and rough. Mrs. Mason hadn't changed her clothes all day. You know how she dresses, Jimmie. And her eyes are so heavy and dull and hopeless. She never has a vision, she never sees anything ahead.

"They haven't time to dream. Why, they do enough work for two women, and the isolation is blighting. Women aren't intended for solitary existences. They need interest and life and love and hope. And where can they get it?

"I heard you talking to Jake yesterday about the way Mrs. McBeth dresses and what her home is like. I know it's filthy, and I know she's a fright; but how can a woman make a home out of nothing? She was a pretty young woman once who deserved the love and care of a good man. Then Tom McBeth married her. He broke her heart first and then her spirit. He is only a rough, brutal fellow. You may see pure rays underneath, but I tell you there aren't many for a timid girl, like she was, to see.

"Why did she marry him? Well I'll tell you one reason why. In this community the daughters are the weaker vessels. They are becoming better educated than the boys in that they usually pass the high school entrance examination; but practically they are in a far worse position. They aren't educated to earn their own living and are dependent upon someone. If their homes happen to be unbearable or if they feel themselves a burden upon a relative they are compelled to do something.

"'What will it be?' Well, every girl naturally expects to get married sometime, so that seems the proper escape. Now you and I know that marriage is the hardest way on this wide green earth a girl can earn her living if she isn't loved and loves in return. It makes no difference whether the man is a millionaire or a laborer. It is the hardest. But our girls haven't been brought up to realize that. So they marry some Jack or Will who happens to ask them. After they find out it's hell they are too proud to tell their woes abroad.

"Of course the majority of the girls do not marry like this, but Mrs. McBeth did, and so have many others. And bright girls must marry stupid boys because there are few bright boys left. The majority of them go away and they don't take the bright girls with them.

MINE AND THINE.

"Oh! Jimmie, my heart has bled to see women working day in and day out like slaves, without one cent of their own. Their husbands never think that it withers their hearts to be compelled to ask for his money. That's the thorn. *His* money! She works and works and her little girls and boys work and it's *his* money always. Why I've even heard men joke with their wives because they hadn't any money of their own with which to buy the pretty little things all women love with which to fix up their homes. And what homes some of them have in consequence!

"This isn't the case always, but I know it very often is. Maybe the man hasn't much to give. If he loves and respects his wife she doesn't mind that. But what there is she surely should be given, not as a gift, but as her due. It's this going from the cradle to the grave as dependents that places us in the grave before we've had time to grow old. I know some women who have never had time yet to be young."

"Molly! Molly!" said Mother reproachfully. "Your father was always kind."

"You're right enough," I soothed, "and my heart has bled too. I know that a man is often jealous of his wife's finer nature until he breaks it in the end. But how can we make her dream until we teach him to dream too. He has lived by his muscles so long that he lives in a muscular world. And never fear but more profit will make farmers, and better husbands, usually. Why, then the best of our young stock will stay here. Men with imagination and red blood will come to crowd out the wastrels who have robbed the soil until the soil will have no more of them.

"Anyhow the girls may make a living here if they wish. They've got to work someway, you admit. Very well! What about bees or poultry? They are as pleasant to handle as a typewriter and I can tell you conditions are often far more congenial. The trouble is, you have the same idea that I had once. You can only see success in a far-away field. From here it looks green enuugh, but it's full up with stones when you reach it.

"Besides, Molly, can't you do something for the women? They don't dream! Well, give them dreams. The secret of this whole problem is leadership. Start out right now. Get them started at music or painting or home improvement, or literature or anything that will bring them together. Get the competitive spirit aroused. Hold up before them something they want. Show them how to get it. Why, if I could send every one of them down to the Macdonald Hall at Guelph for one year I'll bet you'd see a start. Now Sis, you've had a good education. Make yourself a leader. Help me out, girlee, and we'll make old Land o' Gold pan out richer than the Klondyke. We'll work in terms of lives and homes."

KEEPING BEES.

"I will, Jimmie. I'll go right over to visit poor Mrs. McBeth to-morrow. And I'm going to keep bees, too. I'll race you for the larger profits."

I looked at Molly's eyes and they were deep wells of healing water. Molly was not pretty. None of our family have ever been accused of that. But she had a good wholesome face. Her brow was high and her mouth was sweet and unspoiled. It was a countenance that it did one good to look upon. And over it all was a resolute firmness very womanly and wonderfully kind.

"It was with that spirit," I whispered to myself, "that the Covenanters (my mother's people) suffered persecution in Scotland. 'Twas with that courage my father's granddaddy grasped his musket and fought for a United Empire in the days of the revolution."

Surely it is better to be well born than to inherit all the wealth of the Orient.

And so Molly and I had a vision. Together we worked and hoped and together we won. That was yesterday. To-day the Jolly Old Folks' Club is an institution in our community. To-day men of initiative and ability have built splendid homes in which dwell happy wives and children upon the broad acres—the despised acres of my youth. You may hear some of their stories again, for they are thrilling tales of courage and faith and love; but many will remain untold forever, save by hopeful faces and substantial homes. And after all, these stories are the most fascinating, the most enduring, the most cheering—hopeful faces and substantial homes. Just that.

But I must hasten my own story. Country life is such a complex thing that it is difficult to weave the many threads quickly, into a narrow cloth.

I finally decided to take a big chance. I have naturally the gambler's instinct—especially when reasonably certain of winning—and farm life is influenced by chance a great deal anyway. We gamble on markets and weather continually. The only man who is sure to lose is the one who never returns anything to his soil. But he's a thief after all, and Mother Nature soon sends her policeman, poverty, to round him up.

I took the insurance money and went to work. Altogether I rented sixty acres of old orchard on ten years' leases. Then I divided the territory into two districts. I made Jake foreman of one while I managed the other. At first the farmers smiled, but when they realized the extent of the scheme they just laid low and watched developments.

My first large investment was in two gasoline power outfits. They made a thousand dollars look small and in those days were not as efficient as the modern sprayers. They were a source of grief to Jake and me. We only knew about gasoline engines by the books. But the books never can tell what a gasoline engine will do.

"It isn't a bit of use to be an expert," said Jake in disgust, after he had vainly cranked with an empty tank. "A fellow can only think of one thing at a time around these darned marchines. They're like a baby—give them too much and they get the stomach ache, and if you give them too little they die."

But in the course of time we mastered them, as we did other problems. And problems arose aplenty that first year. The trees were infected with bark lice, although fortunately the San Jose Scale was unknown. Some trees had wet feet and some were on a dry knoll. Then it was a constant task for Jake and me to supervise the work. The men we secured were untrained and we had to watch thm. I distributed bulletins published by the Provincial Department of Agriculture among them which explained very carefully the various operations of orchard culture and the nature and life histories of the insects and fungous diseases we were combating. But the majority of them were only hired men. They hadn't learned to concentrate. They longed for success probably, but they hadn't brains enough to see that success is the sum-total of little things. They wanted to make one jump some day and catch it near the top. I have some of them working for me yet. They are still hired men.

The weather favored us; I won on that gamble. It was warm and sunshiny, with a few good soaking rains. The fruit set well and my spray queered the scab and worms and caterpillars.

I didn't gamble on the markets, for I sold through Dan Brown. I gave an honest pack and Dan was honest too. The sale of that sort of produce isn't a gamble. It's a hard rock-bottom certainty.

After everything was cleared up that winter, I repaid Mother the three thousand dollars and had—how much do you suppose? Well, I could just figure three thousand four hundred dollars in my bank book.

"Good boy," said Mr. Bradshaw, the local bank manager. "I gave you credit this summer, Jimmie, because I knew that your Daddy before you was absolutely straight. I knew, too, that you had an idea in your head worth thousands of dollars to me if it went through. When a man's straight and has an idea worth thousands, I'm right on the job."

"Thousands to you?" I inquired.

"Sure thing. Why, just last week Bill Mason was in here telling me that after your lease expires he will pay off his mortgage. Old Seth Brown has been undecided whether to shoot himself or not, ever since he saw the crop of Spies you

Continued on Page 73.

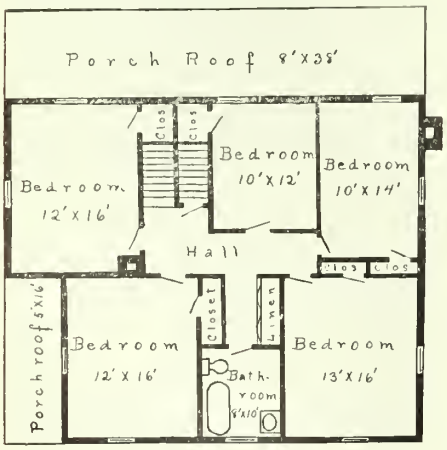
What We Did With An Old House

How an Old Farm House Became a Model of Comfort and Convenience with a Small Outlay of Cash

By GENEVIEVE

There are many farm homes of fifty or sixty years standing or even longer which are too good to pull down, but which are sadly in need of remodelling to fit in with the modern ideas of convenience and sanitary arrangement. To such farmers this article will be especially good. A series has been running in Farmer's Magazine dealing with the erection of farm homes and the furnishing of farm rooms in the February, March, April, May and June issues. An especially good plan of a farm home showing a farm office built in, appeared in the June number. Any question or advice will be cheerfully given by the writer, but it is impossible to furnish blue prints without the regular architect's fee.

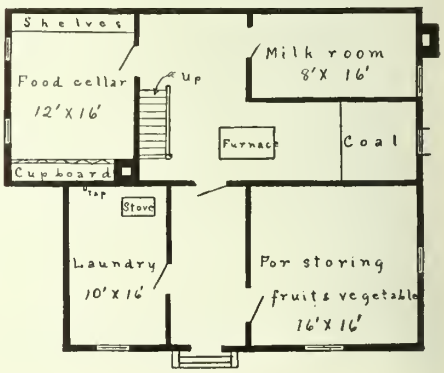
As soon as I began to grasp the wonder of it, that one house was to be *our* home, the vision of that house was always before me. Sometimes it took the form of a little white cottage, then a brown bungalow with a red roof, or an old-fashioned stone affair with a low veranda; but always it was little and snug, with trees around it and Jane inside. Perhaps that was why I could never keep my constructive faculties on the house itself long enough to spend hours together over blue prints and pencil drawings in the paradise known only to individuals who have the experience of building their own homes.



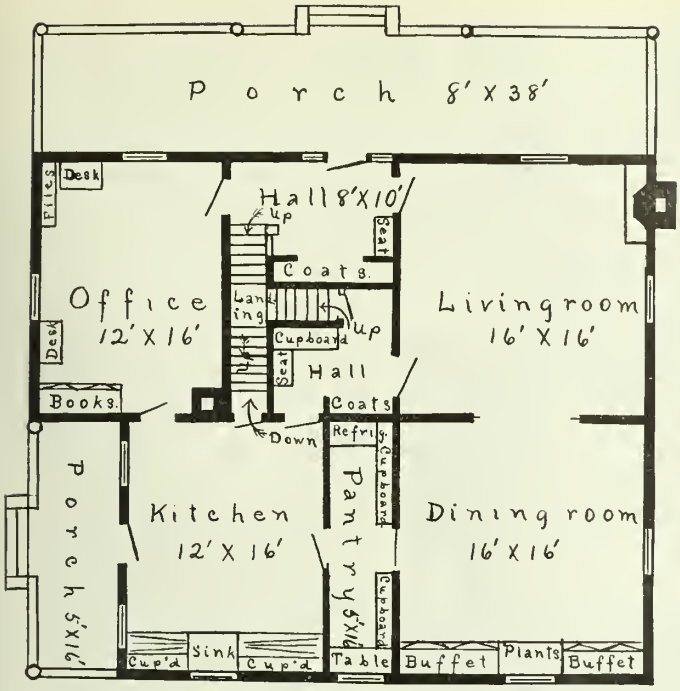
The first floor plan.

But unfortunately like many others whose dreams of a home-made home have failed to materialize, because circumstances thrust a ready-made house in their way, we were obliged to fold up our blue prints and tear up our pencil sketches and try to reshape what someone else had built, to conform to our own ideas of living. We hadn't much money and we had to buy a farm, so when we found a place with a livable house on it, economy overcame less practical considerations, and we took it. It looked rather impossible then, but in less than two months we had it made over into just about what we wanted at first. Since then I have wondered why anyone will live year after year in an inconvenient, uncomfortable, unbeautiful house when the moving of a partition wall or the putting in of a few dollars' worth of plumbing would transform the whole place.

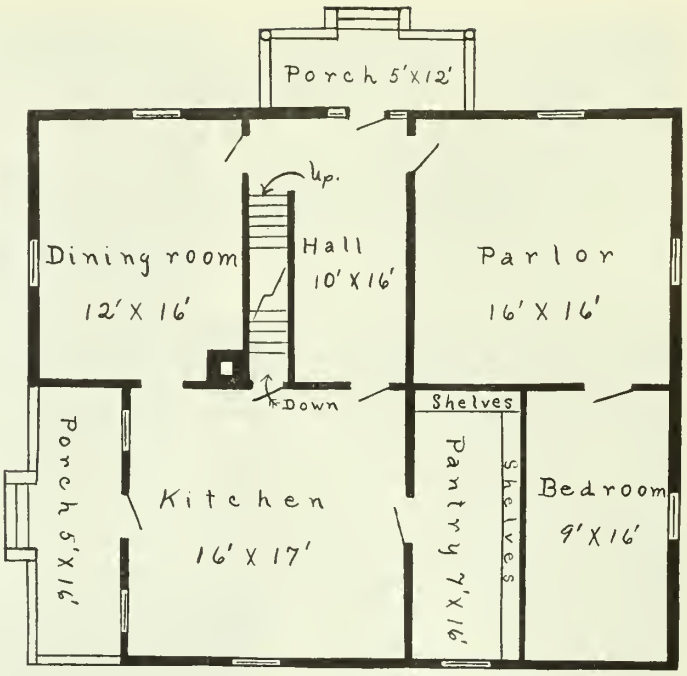
Our house was a well-built stone affair, in good repair and set attractively beside a poplar lane with an evergreen wind-



A basement plan.



The rebuilt plan of this farm house, showing how it has been made over into a more attractive design, besides securing space for an office.



The old plan of the house. One that was hard to heat, uncomfortable, with a parlor that was never used and a parlor-bedroom of the old-fashioned type.

break at the north and a fine old elm in front. The trees themselves were worth a little fortune. The house, too, was good looking enough, except that the narrow useless little porch over the front door, with its slender posts and fretted cornice was all out of harmony with the square substantial lines of the stone walls. We had it taken down and an eight-foot porch with solid white columns, and cement boss and floor, built right across the front of the house. We were using cement in the cellar at the time so it cost less than lumber and will stand more wear—we wanted a porch to use; and since we got a hammock and stretcher it has been our rest room for the summer evenings. There are too many farm houses well furnished from the kitchen up, but lacking any corner to drop into for an hour of actual rest.

Inside, the house had some fine possibilities in the shape of high ceilings and deep set windows, but the layout was anything but convenient; there was no bathroom or water system, and the only means of heating the rooms upstairs was through stovepipes which did not reach all the bedrooms, even though three stoves had to be kept going downstairs if the parlor and dining-room were to be used in the winter. The economy of putting in a furnace was evident, and since we considered a bathroom a necessary luxury it came next. We had wanted to have the dining-room oak-paneled, but decided that could wait rather than have a cheap plumbing system. The water was pumped by a windmill into an overhead tank in the house, the overflow running into the barn for the stock.

The floor plans show what a difference was made by a few changes in the arrangement of the rooms. In the original plan the front door opened into the hall ten feet wide and sixteen feet long. Except for the space taken by the stairway and the cellar stairs, this room was all wasted, and a walk of sixteen feet necessary to get from the kitchen to the parlor or to the foot of the stairs. By dividing this hall into two and cutting a second door into the living-room, which seemed to be brought close to the kitchen without opening directly into it; there was room for a coat closet in the front hall; a "back stairs" would be made to meet the original stairs on a landing half-way up, and under this stairs we had a little closet with shelves for storing anything from game boards to driving gloves. This second hall is also fitted with coat hangers and a box seat for rubbers.

The dining-room was on one side of the hall, the parlor on the other with a narrow spare bedroom opening from it. The remainder of the back part of this floor was covered by the kitchen and pantry, the pantry being placed as far as possible from the dining-room. Having the bathroom on the second floor we didn't want a bedroom downstairs, and we did want a more convenient arrangement of the kitchen, pantry and dining-room, so the partition between the pantry and bedroom was taken down, making a good-sized dining-ing-room back of the living room, with sliding doors between so that the two rooms might be thrown into one when desired. Then by partitioning off the end of the kitchen, we have a fine little pantry with built-in cupboards, ice-box, and work table, just where it should be close to the kitchen and dining-room.

The room formerly used as a dining-room we have fitted up as an office, or den, or call it what you like, but it is a cosy unspoilable little nook where we have our books and writing desks and a few pictures and things that wouldn't interest anyone else.

We didn't make any changes upstairs except to put a clothes closet in every bedroom, cutting up the rooms as little as possible. There was only one in the house when we came—a room eight by sixteen feet, opening from the hall, and used, I suppose, for the reserve apparel of the whole family. This room we fitted up for a bathroom, it being smaller than the others and almost directly over the kitchen so that a simple plumbing arrangement was possible.

The cellar was deep and cool, with an earth floor, clean and dry except in damp weather and for a few weeks every spring and fall. One of our first improvements was a cement floor, and when you get started working with cement it seems hard to stop so we made partition walls dividing the whole space into several rooms. This was necessary, of course, as we were going to have a furnace. But beside the rooms for storing food and winter vegetables, we had a milk-room, and a laundry. The laundry being directly under the kitchen, it was a simple matter to make a pipe-hole in the chimney and have an old stove for boiling the clothes, and also to pipe water down from the main supply when the cistern went dry. We put in a pipe from the cistern as well. These things cost very little, practically nothing except the labor, nor do they add anything to the outward appearance of our home, but they mean a lot of lightening the work and conserving the health and comfort of the family, and whatever can do that is cheap if it can be afforded at all.

And, of course, it is only an old house after all, but since it is furnished and we are living in it, we believe we would follow the same plan if building a new one Then, it wasn't a bad house to begin with, but if a house is worth living in at all, it is worth making as livable as possible, even if you do intend to build a new one some time.

The Hired Man:

By MAJOR WALTER JAMES BROWN

Good Employers in the Country Generally Gather Around Them Good Employees. Some Reasons for the Army of Hoboes

OF all the difficult questions with which the farmer has to deal, the most difficult seems to be that of farm labor. Decreasing soil fertility, low crop yields, impure seed, insect and weed ravages, diseased and "scrub" livestock, drought, frost or tempest—all seem to fade away into insignificance before the huge problem of labor. The question demands attention at every turn. It exists almost everywhere. Nearly every newspaper, journal or magazine published on the continent of North America devotes more or less space to the discussion of this theme Hired help is scarce, is not efficient, but is nevertheless high in price. These are the facts, and these points constitute the burden of scores of agricultural addresses, and of many a farmer's letter that finds its way into print. The provinces of the Dominion of Canada are not the only sufferers because of the scarcity of farm help; but practically every state in the American Union is suffering equally and for the same reason.

On this continent we have too many farms and too few tillers of the soil. The farms are frequently too big, and very few are more than indifferently cultivated. People are always land-hungry, and nearly every man who is ambitious wants to possess some earth—usually he wants all the earth that he can possibly control. One result of this ambition is that there are a large number of people in Canada and in the United States who are really "land-poor." In Great Britain there seems to be labor enough and to spare; but the difficulty there is to get the land to live on and work. It is true that there are large areas in the old world, that have for centuries been considered too poor to crop, that are being reclaimed, while modern agricultural science is turning the waste places into gardens of fertility. People are beginning to learn that there is no such thing as poor land. If there is any soil at all, it has some useful purpose. All land is good, while some land is better; but the good land may become the best if properly handled.

These facts are changing the outlook of the people of the British Isles. It is true also that numerous large estates in England and Germany are being divided up into small holdings, and town and city people are moving out on the land and making a success of intensive farming.

The hired man should consider it his first duty to look after the very best interests of his employer, and in this nothing is more important than the proper care of the work horses.

The farmer as an employer of labor is at a miserable disadvantage as compared with the industrial employers of labor. The reason lies in the great bulk of the floating farm population being unskilled labor. There has been no real technical education until lately so that the young man who wishes to go farming has to spend considerable time with a good farmer to acquire the knowledge necessary to become a truly useful man. When he gets that far he is in a position to take a farm of his own. Thus the ranks of the farm laboring class naturally become sifted.

Major Brown who writes this article was formerly editor of the Weekly Globe and now directly connected with agriculture in Western Ontario has studied this subject at close range and his conclusions are fairly accurate.

In many parts of Great Britain the housing of the farm help is vastly in need of improvement. In Ireland the Government is taking action in this matter, and the rural laborers are glad. In all parts of the British Isles the wages paid to the agricultural laborer are small and his outlook is not bright. If this man and his family would come to Canada, there is nothing too good for them. The skilled farm laborer in Canada is a wage-earner to-day, while to-morrow he is a tenant and the next day he owns a farm with stock, teams and implements and his children go to college. It has been said that the abundance of cheap farm land in this country makes it an impossible task to keep farm help. As soon as a man learns something about farming, he gets a farm for himself and is independent. This is partly true; but does not explain why the people who should be filling the farm labor market are so few in number. If the instinctive love for the land which is in the heart of every man, except, possibly, the Jew, were not crushed or were not thwarted in its purpose, there would be thousands of able-bodied men seeking the opportunity to work on the land, but instead, there are thousands walking the streets of the cities and eating at soup-kitchens, while the labor of producing food from mother earth is going by default. Men have turned their backs on the oldest and noblest calling of mankind.

The Governments of Canada and the United States have for years sought by every means in their power, natural and artificial, to promote industrial development and to transfer the population from the country to the cities and towns. The rural classes have submitted to this policy and time and time again have sanctioned and approved of it. The farmers of this country, for example, gave the manufacturers protection against foreign competition and themselves compete with all other producers in the open markets of the world. They have bonused the great industrial establishments that they may in turn pay high wages to their employees and strip the land of its workers. They help to pay for technical education and vocational training for the city men's children, but refuse to insist on agricultural instruction for their own. They encourage the formation of trusts and combines and send the paid representatives of special interests to Parliament from purely rural and agricultural constituencies; but will not organize or cooperate among themselves. What are the results? The Governments of Canada and the United States have taken the mandate of the farmers literally and have acted on it.

In 1880 the United States had a popu-

lation of more than 50,000,000, and 70.5 of this population was rural. Since that date large areas have been opened for settlement and the immigration influx has rapidly increased; but the percentage of rural to urban inhabitants has steadily declined until in 1910 only 53.7 was rural. Between 1900 and 1910 there was an actual rural loss of 4,656,815. This means that 87 per cent. of the natural increase of the rural population during the ten years was transferred to the cities. In Canada the same characteristics are manifest. In 1891 the population of Canada was 4,833,239, and 70 per cent. was rural. During the next ten years the percentage of rural population dropped to 62.3, and in 1911 was down to 54.4. During the ten years between 1901 and 1911 this country received 1,715,326 immigrants and the population increased by 34 per cent.; but the cities have increased by 62.25 per cent. The astonishing fact is, that notwithstanding the opening up of the great north-west for settlement and the organized effort of the Governments to place immigrants on the land, the total increase of rural population in the ten years was only 17.6 per cent. This means that the whole natural increase and more of the rural population has been transferred to the cities.

The movement of population from country to city, together with the immigration influx, has furnished the urban centers with cheap labor and has created intricate social problems that threaten to overturn the nation's most cherished institutions. This movement has also depleted the rural homesteads of the labor necessary to cultivate the soil and has brought to rural communities the symptoms of social stagnation, intellectual poverty and moral decay. Where the foreigner has moved into a neighborhood the native has moved out, and from the standpoint of nation-building the last condition of the country is worse than the first. If the agriculturist of 1914 raises his voice in protest because of the Government's suicidal policy, he is told that he is "out of order." The time for speaking was two years, or ten years, or twenty years ago. Then, too, there is no evidence that the farmers demand or even wish the industrial policy of the country to be reversed and an agricultural policy to take its place. This is the situation. This is the reason of the rural labor scarcity. Who is to blame?

There is but little profit in discussing the mistakes of the past unless an effort is to be made in the future to correct them. The Canadian farmer is facing a condition, not a theory. He is making and has made for thirty years stupendous sacrifices that this country may have a place in the ranks of industrial achievement. The pinch has come at last, and the whole range of agriculture is to-day suffering because the farmer, stock raiser and fruit grower cannot get the help necessary to do the work on the land. If the thinking men identified with agriculture will study this question and will act on their conclusions with energy and thoroughness, the "powers that be" dare not withstand the pressure.

Each province should have a farm school for immigrants, and every man

The dairy business is one that requires the very best moral character in its employes. A man should have all kinds of patience and good humor in the stable. The employer himself must be a man that is slow to wrath.

and woman that can be induced to attend this school for a short course of instruction in the ordinary mechanical work of the farm should be enrolled. The Governments should make an effort to get the ex-army men and boys of Great Britain, as Australia is doing so successfully, and bring them into this country to supply the demand for farm laborers. Instead of crowding the cities with unskilled workers who cannot get work, the Governments should drain the congested centers of the men and women needed to multiply the fruitfulness of the soil. One of the chief difficulties which the immigrants have to meet is that the immigration officials, in too many instances, are not sympathetic toward farm work or rural life and advise the newcomer against going to the farm for employment Another difficulty is that the vast majority of the newcomers have no knowledge or experience in farm work and need instruction, which the provincial government should supply. But, perhaps, the most powerful factor in defeating the purpose of immigration and in depleting the soil of its workers is that the real status of the hired man on the farm is not understood. The ignorance that prevails regarding this subject is appalling. The farmers themselves are largely to blame for this condition, but the fact remains that the agricultural worker in this country has, under average conditions, a better position in every way than has his brother in the city. If his rights are recognised and his duties conscientiously performed, there is no comparison between the lot of the worker in the country and in the city. If this fact were understood, and the farmers did their part, the men wanting work on the farms would be far more numerous than are the applicants for odd jobs in the great centers of population. This is a phase of the subject that deserves careful consideration.

THE HIRED MAN.

Some Axioms for the farmer.

1. Few farms average in their working hours as high as the factory average.
2. The ten-hour day on the farm is a good standard.
3. A farmer who says he cannot hire for the year had better quit the farm.
4. Regular pay days should be fixed on every farm.
5. The employee who has no interest in the farmer's business is about the most useless creature on the face of the globe
6. A hired man who leaves before his contract expires is liable to damages.

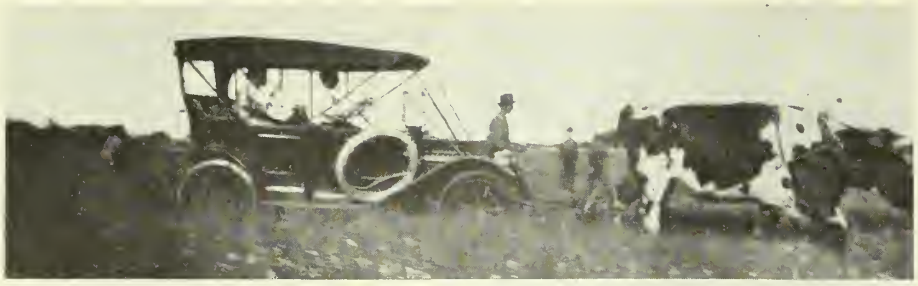
HIRED MAN'S RIGHTS.

What are the rights and what are the duties of the hired man? These may be outlined briefly. The hired man, whether married or single is entitled to regular hours of employment, varied in number according to the season and to the kind of business conducted on the farm. The complaint about long hours on most farms is unfounded. There are very few farms where the working hours of a week will average anything like as high as they average in a factory. Regular hours of employment are reasonable and when followed are better for both employer and employee. While it may be necessary to vary the length of day to meet the needs of the seasons, yet the ten-hour day is a good standard, and will accomplish all that is needed on the majority of well-managed farms. The hired man is entitled to a long season of employment. Men on farms should be employed by the year wherever possible. No other plan is just to the man or good business for the farmer. There are many people who claim that they cannot afford to hire men by the year. The writer would like to say to such people what an old Scottish farmer in Western Ontario said to him not long ago: "A farmer who says he cannot hire by the year had better quit the farm. If he would keep an extra brood sow and put in an extra field of corn he could easily pay the man's wages and make money on the transaction."

The hired man is entitled to the regular legal holidays. If he elects to stay at work on those days, he should be given other days instead. The labor of Sunday should be reduced to the minimum. It is not right to hold over special jobs for Sunday. The work of necessity alone should be done, and all the time possible should be given to rest. Sunday is the day to clean up, body and soul, to turn the thoughts and ideals into spiritual channels. Recreation in a mild form is considered legitimate by most people if taken quietly during a Sunday; but the noisy and profane continental Sunday as observed among semi-civilized people is not in keeping with the spirit of Canadian institutions. There is no more beautiful day in the calendar than a quiet Sunday in the open country close to Nature's heart. The Christian Sunday, that is, the Lord's Day, is understood by all intelligent Canadians, and should be kept in a right spirit on the farm and elsewhere.

A DEFINITE PAY DAY.

There should be a definite understanding as to when the hired man is to receive his pay and how much he is to receive on each pay day. Not every farmer has a bank account and can pay every week;



There are some cases where an emergency occurs which may upset the regular run of things. This prairie scene where the automobile got stranded may be a case in point.

but the pay days should be fixed. It is often a good plan to pay 50 per cent. of the monthly wags at the end of each month and then settle up in full at the end of every third month. The oftener the pay days, the lower the wages that employees are willing to accept. This is where many city employers take the advantage of their position. On the farm, if the hired man is temporarily ill he should not have the time deducted from his pay. This is not the plan that prevails elsewhere; but it is a practice that helps the human heart to find expression, and it makes the hired man a better worker and a more faithful servant. During slack seasons it is always wise to give the hired man a half-holiday now and again. If he is a married man, this half-holiday will be greatly appreciated. A single man when he boards in the family is entitled to a comfortable room, with a good bed, chairs, writing table, etc., the use of the bath, a place to read and smoke, and the ordinary comforts of home. Every hired man should be encouraged to attend meetings of farmers' institutes, etc., that he may get some knowledge and inspiration, and thereby become more interested in and more useful to agriculture. The more education the hired man has, the more valuable he is likely to be to the farm where he is employed. It has been found that it does not pay a railroad company to hire an ignorant man to shovel coal into a boiler. He wastes coal and does not get the best results from the boiler. Hundreds of thousands of dollars have been saved to the railway companies in coal bills alone by making it necessary for coal heavers to pass an examination to qualify. How much more necessary it is for the hired man who is feeding stock or sowing or cultivating grain to know something of the principles of science underlying the work he is doing.

THE UNFAITHFUL MAN.

It may seem that a wide field has been covered in discussing the rights of the hired man. Certainly the most essential right to which he has a just claim is kindly human treatment. The worst employer is the man who has been a servant himself. Good employers in the country generally gather about them good employees. When the hired man's duties are outlined, the same consideration should be given. The farm laborer should fulfil his contract. This is imperative. A man who hires for the season's work and goes away, as these men sometimes do, without notice, and leaves the farmer's crops to suffer, is legally liable for the damages resulting from his non-fulfilment of contract. A man who will break his agreement without proper reason should be forced to make compensation or go to prison. The employee who looks only for his pay envelope, who has no interest in his employer's business, who drops his tools when the whistle blows, who keeps his eye on the clock and is only a time-server at best, is about the most useless creature on the face of the globe. He is the curse of half of the manufacturing institutions in the cities of Canada, and he has in some instances found his way into the country also. He makes up the vast army of "hoboes" in the United States. His views are socialistic. He believes "the world owes him a living." He works only because he has to. He is the product of our age and of our defective systems of education. The hired man on the farm should be at his work punctually, should take a measure of pride in what he is doing and do his best, should look out for his employer's interests, should do full service whether his boss is present or not, and his conduct should at all times be agreeable. "Thoroughness and efficiency" should be his motto. If he is given the privileges of the farmer's home, he should not abuse those privileges, and should refuse to gossip about confidential family affairs. If he is the right kind of a man, he will do for his employer as well as he would do for himself. He will render the whole-hearted service for which money alone is an inadequate return. Men who do this get on, while others do not.

FARM WORKER BETTER THAN CITY WORKER.

Space will permit only a few closing observations. Fortunately the facts are now available and a comparison can be made between the lot of the worker in the factory and on the farm. Statistics compiled during a period of years prove that the wage-earners in all the manufacturing establishments receive substantially the same as those who are employed on the farms. This is the statement of Dr. L. G. Powers, of the United States Census Bureau. He says again: "All things considered, the earnings of agricultural toilers are much greater than those of the employees of railroads." These two facts show that it is not for the money alone that men leave the farms and go to the cities to work. The city wage-earner cannot save money or raise a family in decency. He cannot lay away any money against the time of sickness and old age. The temptations to spend what little he has are a hundred times greater in the city than in the country. The work in the factory or on the railroad is far harder, is more exhausting, is more mechanical and less interesting, is more destructive to health and is less conducive to longevity than the work on the farm. If a hired man is able and thrifty he may easily marry and bring up a family and in a few years have a farm of his own and all the comforts and blessings of an independent life in the country. This or its equivalent is impossible for the factory worker. Where the subject of the hours of labor on hundreds of typical farms has been studied it has been found that the working hours for farm help are far fewer in number than they are in factory or shop. If the farmers of this country would build cottages for married men and employ their help by the year or as long as they can at a time, if regular hours of work were agreed on, if the methods of paying wages were systematized, if hired men were encouraged to cultivate a plot of ground of their own and raise a little stock of poultry as they do in some parts of England, if rural amusements were encouraged and a wider social life developed it is safe to say that country life would appeal more strongly to the better class of city workers and thousands of them would leave the toil, grime, poverty and shame of the congested centers of population and would go out on the farms where human beings can live and thrive and multiply and enjoy in independence the gifts of Nature and the pleasures of the vineyard of God.

BASKET WILLOW CULTURE.

Until recently basket willow cultivation has been a declining industry. Serious injury was done to the trade both in America and in Europe when rattan and other substitutes began to be introduced. The demand for willow is again increasing. Considerable success has attended its culture in northern New York and some places in Ontario and British Columbia. It grows best on deep, rich, humus soil with a moderate amount of sand which retains the required amount of soil moisture. Although there are 95 different strains considered valuable commercially, the varieties most in use in America are the purple willow, the American green willow, the Lemley willow and the Patent Lemley willow. Of these the purple willow is by far the best variety for American conditions, although many prefer the American green willow.

In New York State, willow plantations are owned by farmers who cultivate and harvest their own crop. Cuttings are planted early in March. These are from eight to ten inches long and are planted from nine to twelve inches apart in the row and two and a half feet between the rows. Harvesting the rods begins about the middle of January before the sap begins to rise. The rods are tied in bundles and stood in a pit of running water four to six inches deep. They are left in the pit until the sap rises when the bark is easily removed. After grading the rods into proper height and quality classes, they are bundled up and prepared for market.

A charming scene at milking time on an old country farm, where the milking shorthorn reigns supreme.

The Gentle Art of Milking

Some Personal Experiences of a Farm Manager that have Taught Things—Maybe Some Heresies

By W. D. ALBRIGHT

"Brews albu-lactic bovine wealth from lacted glands."
—From parody on "The House That Jack Built."

GOOD milking requires a suppleness, skill and practice comparable except in degree to the touch of a pianist. To obtain first-class results from a dairy herd, expert milking is scarcely less important than liberal feeding. I am not sure but that it is more so. Meal may be shoveled to the cows—or we should say, measured—along with the best of forage, but unless the milkers are efficient and painstaking as well as regular and kind, returns will be disappointing. The full flow will not be maintained; the feed will produce tallow instead of butterfat, and fortunate the owner if udder troubles do not develop, eventuating in the loss of quarters and in other evils.

When we speak of gentle milking, much more than kindness is implied. Kindness and quietness on the part of all stable hands should be taken for granted, or insisted upon strictly if necessary. Loud talking, rough treatment, impetuous movements which startle the cow and are followed by a yell, a kick or a slap are so completely foreign to the discipline of a well-ordered dairy barn that one is inclined to forget how common such usage still is in certain quarters. Wherever permitted, it causes loss, and the more highly developed the nervous system of the cow the greater the effect of the treatment. This is one reason why men accustomed to scrub stock and scrub methods of handling it are sometimes disappointed with the returns from their first investment in pure-breds. Highly bred stock is capable of producing superior results only when the feed and care are suitable.

Owing to the greater prominence that is being given to mixed farming in Canada, the present article on milking by hand by this well-known writer will be cordially received by our readers.

In an early issue will follow an article on Milking by Machinery, and the progress that is being made by invention to approximate as near as possible to the hand method.

I am persuaded that dogging cows is an expensive business, even though the dog be not permitted to drive his charges off the walk. Only on this ground can I explain the difference in results obtained in more than one case under my charge where a dog was used one season but not the next. Fear of the dog's teeth, along with the nervous disturbance caused by his yelp and presence, undoubtedly affect the placidity and performance of a high-strung dairy organism. Of course, running cows with a dog is a piece of cruelty and folly which no real dairyman will countenance—certainly not if he studies his daily milk records and periodical butter-fat tests.

While little is positively known of the function of milk secretion, we may assume it to be stimulated by affection. For best results, affectionate relations between cow and milker should be established and maintained. As the trite saying is, the milker must become the cow's calf.

But more than kindness is called for. The motion of the hand must be deft and pleasant to the nerves of udder and teats. Twisting or pinching of the latter, uncomfortable pressure upon the udder or

any part of it will react unfavorably upon the mysterious process taking place in the lacteal glands. Milk secretion must occur chiefly during the operation of milking. Otherwise a fresh cow killed with a full udder would have a pailful of milk instead of the quart or two usually found. No doubt the materials are largely accumulated in the udder between times, but the actual secretion takes place principally during the operation of milking or sucking as the case may be. When we speak of cows holding up their milk we do not mean exactly what we say. We really mean that the cows are not using all the milk-making material assembled in the glands. The fact that a cow has been stripped out dry is no guarantee that she has yielded all the milk that a more skillful milker could have obtained from her. A poor milker may sit down to a cow that has been accustomed to give twenty pounds at a mess and obtain perhaps nineteen or nineteen and a half. The regular milker may follow and strip her out again but unless he has waited for some time, the chances are he will be unable to obtain more than a few strippings from each teat. The two milkers cannot, as a rule, obtain at this milking as many pounds as the skillful one could have done had he milked the cow in the first place. Absence of strippings is therefore no sufficient evidence that a cow has been well milked. A better indication is the appearance and feel of her udder—its slackness as compared with the usual condition of the same udder after milking; for, of course, cows differ widely in the degree of tension of their milk glands when empty. But a good herdsman knowing his cows can tell fairly accurately whether they have been well milked and he need not be a good milker himself to do it, either. For fine discrimination among his various milkers, however, he requires the information of a daily milk-record along with his own observation of the work done. Records reveal some astonishing results. I remember reading in Hoard's Dairyman somewhat over a year ago of a pure-bred Holstein cow at one of the state stations whose regular milker was absent for a time and a substitute employed. I do not remember the particulars precisely and unfortunately have not the article at hand. The essential fact, however, was that two or three changes were made back and forth between the two men. One was able to raise the average production of the cow steadily by two or three pounds each day he was on duty, the other decreased it as surely. The impression I formed from reading the particulars was that the one milker, if taking the cow in hand at freshening would probably with the aid of good feeding have attained an eighty-five or ninety-pound production with her, whilst the other with the same feeding would probably have been unable to get her to do better than sixty or sixty-five pounds a day. It was an extraordinary case but I am convinced that similar differences, only in degree, would be found quite common if we could always get at the facts.

SOME GOOD MILKERS.

The official who wrote the experience cited above, did not say that the unsuccessful milker was ordinarily a poor one. He may not have been. One milker may excel another with one cow, but fall short in the case of her mate. The size, shape and set of the teats have something to do with this. So also, perhaps, in some cases, the temperament of the cow. It is conceivable that a quick motion may be congenial to one cow while a long steady pressure of the hand might suit another better. I am certain there is a difference in the adaptability of cows to different milkers and it should be studied in the light of the milk records by the dairyman desiring a maximum profit from his herd.

While most persons who have had practice can milk tolerably well, taking the general run of cows, there are some few who never can and never could become really good milkers. From a close comparison of the work of different dairy hands who have been under my charge, I have half-formed a theory that persons of athletic capacity are most liable to have the suppleness of wrist, hand, fingers and muscle required for good milking, even though, as is sometimes the case, they lack the plodding, resolute temperament demanded by general farm work. I wonder whether this opinion is confirmed by the observation of others. Let me own it frankly—I am a poor milker myself. It is not from lack of practice either, for as a farmer's son and subsequently as a herdsman and manager it has been my portion at one time or another to milk as many as eight or ten cows regularly for a summer and as high as fourteen. How long it took me to go down a line of fourteen cows it is perhaps unnecessary to state. The point is, I have had plenty of practice, and have, moreover, always done my best. Yet I have ever had the chagrin of realizing that I was doing poor work at the milking stool, generally securing less by from several ounces to half a pound per cow per milking than a good milker should have obtained. Strippling boys and girls have gone into the same stable and milked much more rapidly and easily than I could possibly do. I have observed my cows gradually shrinking in flow while others in the same stable and on the same feed were holding their own for months. I have noticed some of my cows developing a habit of holding up their milk, giving it tardily by dint of much stripping and irregularly in quantity, yielding, perhaps, fifteen or twenty pounds at one milking and twelve or fourteen at the next. And finally, certain of the cows would develop gargety symptoms, occasionally threatening the loss of a portion of the udder. I have seen the same cows taken in hand by another milker and brought back to a satisfactory daily production. I am fond of cattle and have usually been a pretty successful feeder and herdsman, but I have graduated from the milking stool and my present connection with dairying consists in the care of a family cow. Calves will do most of my milking in future—at least until such time as mechanical milkers are perfected to the point where they do not have to be followed by strippers.

In view of all this painful experience—painful alike to mind and muscle—I shall hardly be expected to tell just how milking ought to be performed. It is almost unnecessary, anyway, for minute directions have often been published. Drawing, however, upon negative as well as positive evidence, it may be said that the operation should be quietly, systematically and rapidly accomplished with as much full-hand milking and as little stripping as possible. At the last some stripping is nearly always called for, but it should not be too prolonged else the cow is liable to acquire a tendency to strippiness.

A BIT OF HERESY.

And now for a bit of heresy, if the editor will spare his pencil. The orthodox advice is to avoid wetting the hands. I believe the reason is that wet-hand milking is so often accompanied by carelessness or even by the abominably filthy habit of dipping the hands into the pail; hence authorities are afraid to countenance the practice, just as they unreservedly condemn the feeding of turnips because of the evils liable to result when proper precautions are not observed. In the light of abuses so prevalent, I am not disposed to take issue with the authorities but am nevertheless of the opinion that where properly done, wet-hand milking may be more cleanly than dry-hand. It is certainly more natural and for many milkers somewhat easier, though most can soon learn to milk dry if they set themselves to it. Wet-hand milking may be very filthy or very cleanly according to the pains taken.

It is assumed that the teats, udders and flanks of the cows are to be made as clean as reasonably possible to begin with, but even after all practicable precautions have been taken there will be many dust-like particles of dandruff, cuticle, dried urine and manure, all bearing countless bacteria ready to multiply their millions in the milk. If teats, udders and hands are dry these impalpable dust particles will sift unobserved into the foaming pail. But if the hands are wet or, rather, damp, some of the dirt will adhere. True, if they are not washed from time to time the filth will presently become incrusted between the fingers and on the palms and backs of the hands, and will break and drop into the pail. A hasty rinsing of the hands after each cow has been milked will avoid this disgusting condition; the hands will be kept comparatively clean and much filth that would have been otherwise introduced into the milk will be thrown with the wash-water into the gutter. Where would you prefer to have it?

I fear the precautions advised below will be considered by many the notions of a crank, but the instincts of a Holland strain of ancestry revolt at the carelessness so often permitted in the condition of cows and the care of milk. Of all food products it is the most delicate and most susceptible to contaminating bacteria. Yet no other that we can think of is so habitually exposed to bad odors, filth and the bacteria associated therewith. What would we think of a housewife who baked her bread in the atmosphere of an average cow-barn, mixing it under the filth-laden hips and flanks of an ill-kempt cow, with manure particles and hairs dropping into

Continued on Page 74.

Spanish Gold

By GEO. A. BIRMINGHAM
Illustrated by DUDLEY WARD

The Story of a Search for Treasure on the Coast of Ireland and the Amusing Situations which Arose

SYNOPSIS OF PREVIOUS CHAPTERS

The Rev. J. J. Meldon, curate, of Ballymoy, a village on the west coast of Ireland, while visiting his friend, Major Kent, comes across an old pocket-book of the Major's grandfather, in which he finds an account of some treasure, supposed to have been hidden by the Spaniards of one of the vessels of the Spanish Armada, on the Island of Inishgowlan. The Major possesses an excellent yacht, The Spindrift, and they decide to take a trip to the island to search for the treasure, which Meldon is very confident of finding, but of the existence of which the Major is very skeptical. Meldon also owns a yacht, The Aureole, a worthless tub, which he lets to a Mr. Langton, who, with a friend, wishes to take a trip round the coast. On arriving at the island Meldon and the Major find Higginbotham, an old college chum of Meldon's, engaged in surveying the island for the Government, and dividing it up into allotments. He informs them he is prevented from completing his work by the obstinacy of one old man, named Thomas O'Flaherty Pat, who owns a piece of land in the very center of the island, entirely surrounded by other people's land, but with which he will not part at any price. Meldon, not wishing to divulge the real reason of his visit, tells Higginbotham the Major is a Government mineralogical expert who has been sent to examine and report on the island's mineral resources. Meldon and the Major start to explore the island and discover they are being followed everywhere by an old man, who turns out to be Thomas O'Flaherty Pat, and who declares he cannot understand a word of English. Meldon tells him they are naturalists looking for sea beetles, and manages to get rid of him; continuing their search, they find an inlet with a hole, which is only visible at low tide, and here Meldon decides the hidden treasures must lie. On returning to the yacht they notice the arrival in the harbor of the Aureole. The following day Meldon starts for the inlet and the cave, and on his arrival discovers a man, who is being lowered over the cliff to the entrance of the cave. This turns out to be a Sir Giles Buckley, the friend who is with Langton, on the Aureole, and son of a neighbor of the Major's, who had lately died. Sir Giles would also have heard of the treasure, as his grandfather was a friend of the Major's grandfather, and had visited the island with him. After some discussion, Sir Giles calls out to Langton to haul him up, and both he and Meldon depart, as the tide has nearly covered the hole in the rocks . The following day, Meldon, having set adrift Sir Giles' boat to prevent his leaving the yacht, again visits the cave with the Major. They make their way through a long underground passage and eventually find two old iron boxes, which, however, are empty. At this point Langton and Sir Giles appear on the scene through a hole in the top of the cavern, which it seems is just under Thomas O'Flaherty Pat's plot of land. Disappointed, they all return to the yachts, and Sir Giles and Langton later on pay a visit to Meldon and the Major, suggesting that as the treasure is evidently somewhere on the island, they should all join forces, instead of working in opposition to each other. We here find them discussing the matter.

CHAPTER XIV.

MELDON stretched himself along the seat of the Spindrift's cabin. He had dined very heartily off tinned corned beef and potatoes, followed by several cups of strong tea. He had lit his pipe and felt happy. The unpleasant duty of washing up the plates and cups was postponed until after the evening meal, when one job could be made of all the crockery dirtied during the day.

"There's one good thing about a morning's work such as we have had," he said. "Even if you haven't pulled off the exact thing you went out to do, you enjoy your dinner and your smoke afterwards tremendously. I expect there are fellows at this moment sitting in London restaurants and clubs and places smoking half-crown cigars after gorging themselves with iced souffles and pates of various kinds, who aren't getting half the satisfaction that I am out of this pipe of common twist."

Major Kent grunted. He was disinclined for philosophic argument.

"There's something in one of Horace's odes about it's not being Sicilian feasts but hard work and a good conscience which bring real satisfaction. I can't recollect the exact words, but if I had a Horace I could find them."

"I wouldn't give Horace too much credit for the remark, even if he made it. An obvious truth of that sort must, I should think, have been discovered by Adam."

"Adam couldn't have discovered it," said Meldon. "As long as he had a quiet conscience he did no work, and when he had to work his conscience was at him day and night."

Major Kent allowed this to pass without contradiction.

"Besides," said Meldon, "I doubt very much whether Adam understood the use of tobacco. If he did I don't see how the secret could have died out. It was Sir Walter Raleigh, as well as I recollect, who brought—— Hullo! there's somebody hailing us."

"Spindrift ahoy!"

The shout floated through the open skylight of the cabin while Meldon spoke.

"I wonder if that's Higginbotham back from Inishmore," said Major Kent. "I hope he hasn't brought a consumptive patient with him. If he has you may deal with him yourself, J. J. It's no affair of mine and I won't help."

"I hope it's not Higginbotham; I don't feel in the mood for dealing with Higginbotham just now. It's as likely as not that he'd be unreasonable about the bacillus hunt."

The hail was repeated: "Ahoy there! Spindrift ahoy!"

"It can't be Higginbotham," said Meldon. "He always comes on board without hailing. It must be that new Member of Parliament off the steam yacht."

"Let's lie low then and pretend we're not here."

"Nonsense. Members of Parliament are often extremely amusing. We'll have him in and listen to him talking about the Irish problem. Get out the whisky, Major. These fellows all drink whisky when they come to this country, whether they actually like it or not. I'll fetch him on board."

He went on deck and discovered to his surprise Sir Giles Buckley and Langton in the Aureole's punt alongside.

"Hello!" he said. "What brings you here? If it's a new throat halyard you want you may as well go straight back again. We haven't a rope to spare, and I warned you to be careful about the one you had."

"The throat halyard is all right," said Sir Giles. "We haven't come about that. We want to have a little chat with you and your friend.

He smiled as he spoke. Langton also smiled. It was evident that they had agreed together to be civil and agreeable.

"Very well," said Meldon. "Come on board if you like."

His tone was not very cordial. Sir Giles evidently felt the necessity for making some sort of an apology before he accepted the invitation.

"I should like to explain," he said, "that I'm sorry for losing my temper with you in the cave this morning. I don't make any excuse for myself, of course, but——"

"It's all right," said Meldon more graciously. "In fact, I ought to apologize first. I played you rather a shabby trick with the punt this morning."

"Oh, that was nothing. We didn't mind, did we, Langton?"

"Not a bit," said Langton. "We laughed."

"Come below," said Meldon, "and have a drink."

Sir Giles and Langton seated themselves at one side of the table in the Spindrift's cabin. Major Kent and Meldon faced them. A bottle of whisky and two syphons of soda-water stood on the table. Tumblers were filled and the ceremony of pledging each other duly performed. Then Sir Giles spoke:—

"Langton and I were naturally disappointed this morning when we found that those chests in the cave were empty. I think I may take it for granted that you two gentlemen were disappointed too, though I'm bound to say you didn't show it."

"You may take it that way for the sake of argument, if you like," said Meldon cautiously. "But I don't admit that we have any reason to be disappointed. It all depends on who emptied the chests."

"Come now," said Sir Giles. "We quite understand that you don't want to give yourselves away. But we don't believe you have the treasure. In fact we're certain you haven't. I think it will pay you better in the long run to be straight with us. We're all of us out of it at present. What I've come to propose is this. Let us join forces and find the stuff wherever it is. I don't deny that Langton and I would rather keep it all to ourselves. So, no doubt, would you and your friend. But we'd rather go shares with you than lose it altogether. And that's what will happen if we spend our time chasing each other round and round this wretched little island as we've been doing for the last three days."

"What do you propose to do?" said Meldon.

"First of all I would suggest that we table all the information we have about the treasure. We'll tell all we know and you'll tell all you know. To show you that we mean to play fair I don't mind speaking first."

"Very well," said Meldon. "We agree to that. Go ahead with your story and I'll tell ours afterwards."

"After my father's death," said Sir Giles, "I got the family place, house, furniture, and so forth, and precious little else. I gave orders to have the furniture sold and the lawyer sent me out a bundle of old papers. I wouldn't have bothered myself about the papers at all, only that just at the time they came I had nothing in the world to do. I don't mind owning that I was pretty well stony-broke just then and was stuck in a lodging in a dirty little French town. I read the papers. Among them was an old diary kept by my grandfather. It appears that he paid a visit to this island in 1798, and——"

"You needn't go into that," said Meldon. "We have papers ourselves which give us all the information your grandfather had. Major Kent's grandfather kept a log, as he called it, of that expedition. I expect that both the old gentlemen wrote down pretty much the same thing—all they knew about the matter."

"I didn't think anything of it," went on Sir Giles, "until I happened to meet another stony-broke Englishman."

"I'm an Irishman," said Langton.

"It's all the same thing," said Sir Giles.

"I beg your pardon," said Langton. "It's not the same thing at all."

"Gentlemen," said Meldon, "if this conference is to go on it must be conducted on strictly non-political lines."

"What!" said Sir Giles.

"My friend, Major Kent," said Meldon, "is a strong Unionist, and I can't allow him to be compromised by any political arguments of a Nationalist kind."

Sir Giles gaped at him.

"I wasn't talking politics," he said "I wasn't thinking about politics. As a matter of fact, I don't care a hang for any politics."

"Langton was talking politics," said Meldon, "and you were arguing with him. He said he was an Irishman and you said he wasn't. Any one with any experience of this country knows where that sort of talk leads to. The Major can't be expected to stand it. He's a Unionist, one of the loyal and oppressed minority, and it isn't right to outrage his feelings by introducing politics into what ought to be a simple business discussion."

Sir Giles checked what was evidently a strong impulse to curse.

"Go on with your story," said Meldon. "I'm sorry for having to interrupt, but do try and keep politics out of it. You were just telling us that you met Langton."

"I met Langton," said Sir Giles, "who was also at the time stony-broke. We got yarning together, having nothing better to do. Naturally we talked a good deal about money, the thing both our minds were dwelling on, because we hadn't got any. I told Langton the story of my grandfather's diary and the Spanish treasure on Inishgowlan. It turned out that Langton had read somewhere——"

"In Trinity College Library," said Langton, "before I resigned my post there."

"Resigned?" said Meldon, with a grin.

"If politics are barred," said Sir Giles, "so are offensive remarks. I have agreed to respect Major Kent's feelings about the Union Jack, though I'm blest if I understand how they come in. You must not insult my friend Langton."

"I apologize," said Meldon. "We'll be non-sectarian as well as non-political."

"You tell this part, Langton," said Sir Giles.

"There's not much to tell. While I was in the College Library I came across an old manuscript written in Spanish. It was a good deal mutilated—in fact there was neither beginning nor end to it. It appeared to be the log of one of the Armada captains. It began with an account of being shipwrecked on a small island off the west coast of Ireland. The island wasn't named, nor the situation described, but he told how he and his crew left the island in two curraghs. Their own boats were, I suppose, destroyed. Before they went——"

"They hid the treasure," said Meldon.

"Precisely. They couldn't take it in the curraghs. They meant to go back for it."

"Did he mention the hole in Thomas O'Flaherty's field?"

"Yes."

"I see. I could not understand how you got at that. This is most interesting. Go on."

"There isn't much more to tell," said Sir Giles. We put our stories together——"

"Oh, but I want to hear what happened to the Spaniard," said Meldon.

"It doesn't matter about him. The log broke off abruptly, didn't it, Langton? What we did was, put our stories together. We made up our minds that the thing was good enough to try for. The sale of the furniture in Ballymoy House brought in some money. I sent Langton over to hire a small yacht. He knew nothing about boats, and you stuck him badly with your old Aureole."

"I don't like that," said Meldon. "We agreed to be non-sectarian and you go introducing religion."

"I only said you stuck him over the boat. There's nothing religious about that remark."

"There is," said Meldon. "To stick a man is a form of swindling, and swindling is a distinct breach of one of the Ten Commandments. There isn't a sect of Christians in the world which doesn't profess to have more or less respect for the Ten Commandments, therefor your remark about sticking Langton over the boat is in the highest degree sectarian and a distinct infringement of the terms of our agreement."

"I've knocked about a good deal in my day," said Sir Giles, "and I've met lots of queer people. In fact, I thought I'd met every kind of man there is in the world. But I'm hanged—'hanged' isn't swearing, it's only a form of emphasis —I'm hanged if I ever met quite as queer a fellow as you."

"What do you propose to do now?" said the Major.

It was his first contribution to the discussion, and the other three men looked at him in surprise.

"Before going into that," said Sir Giles, "we'd like to hear what you know about the treasure. You've had our story. Let us hear yours."

"We've no story," said Meldon. "We had the information in Major Kent's grandfather's log, pretty much the same as what you got from your grandfather. That's all."

Sir Giles and Langton looked at each other. Suspicion was in both their faces.

"We had nothing else to go on," said Meldon.

"Then how did you find the cave?"

"By inductive reasoning," said Meldon. "By careful observation, and a proper use of what is called the scientific imagination."

"If you won't be open and above-board with us," said Sir Giles, "there's no use our talking to you. It's neither fair nor honorable of you to keep a card up your

"Please don't stir. I shouldn't dream of taking your chair. I'll sit on the table."

sleeve in this way when we've laid all ours on the table."

"I've got no card up my sleeve," said Meldon. "As a matter of fact, I don't play cards, so I wouldn't be likely to have one about me—up my sleeve or anywhere else. I haven't played cards since I left college, and even there I didn't cheat."

"Do you expect us to believe that out of all possible places on this island where that treasure might have been hidden you lit on that cave straight off by accident?"

"I don't expect you to believe anything of the sort. What I said was, that I arrived at the cave by a process of reasoning. You may not be able to reason yourself, but there's no use denying that other people can."

"Strikes me as a bit thick, that. What do you say, Langton?"

"It's a damned lie," said Langton.

"Now, if I said a thing like that to either of you," said Meldon, "you'd lose your tempers and try to break my head with a stone. But I happen to have some self-control."

"I believe," said the Major to Meldon, with a broad grin, "that this is the first time you've spoken the truth since we came to this island, and it's the only time you haven't been believed."

"We may as well go," said Sir Giles. "There's nothing to be gained by standing here arguing with men who have no sense of honor or decency."

Langton gulped down the remains of his whisky and water and stood up. A sharp bump against the yacht's side shook him into his seat again.

"What the devil's that?" said Sir Giles.

"It must be Higginbotham," said Major Kent. "He always does that. He's come on board twice before and each time he has rammed the yacht as if he were a torpedo specially paid to knock holes in the sides of ships."

"I'll fetch him down," said Meldon. "Don't go yet, Sir Giles. You'll like Higginbotham when you meet him, I'm sure. He'll want to talk to you about tuberculosis. He's frightfully keen on every kind of consumption, and he's got it into his head that you're interested in the subject."

He rose to go on deck. Before he succeeded in getting clear of the table Higginbotham descended rapidly, legs first, into the cabin. He was flushed, eager, and evidently in a condition of great nervous excitement.

"I've just got back," he said. "I came off at once—I haven't a minute to spare—to tell you that the Granuaile is in."

"What is the Granuaile?" said Sir Giles.

"Oh, I beg your pardon. I didn't see that you were here, Sir Giles. I was going over to your yacht to tell you. I thought you'd like to know. It will be time enough to give my report later on, won't it? I can't stay now."

"What's the Granuaile?" said Sir Giles. "Let's get that first."

"She's the C.D.B. yacht, and the—"

"For God's sake, man, don't talk alphabetical riddles. What's the A.B.C.?"

"C.D.B.," said Meldon mildly, "stands for Congested Districts Board. Mr. Higginbotham is part of the C.D.B. He's the board's representative on Inishgowlan."

"The Chief Secretary is here," said Higginbotham. "I can't possibly stay. I'm expecting him up at my place every minute. I must be there to meet him. Good-bye. I suppose you'll come ashore soon and pay your respects. Good-bye for the present."

He backed rapidly up the companion ladder and disappeared. A minute later there was a sound of scraping and another bump against the yacht's side.

"Am I to understand," said Major Kent, "that the Chief Secretary is on the island?"

"Apparently he is," said Meldon. "I wasn't expecting him, but now that he has turned up we must all try to make his stay as pleasant for him as possible."

"Who is the Chief Secretary?" said Sir Giles. "What is he Chief Secretary of? Is it that A.B.C. thing which the last lunatic talked about?"

"You've lived abroad," said Meldon, "or else you'd know that the Chief Secretary is the principal boss of the Government of this country. In fact, he is the Government. He's far and away a bigger man than the Lord-Lieutenant, although he doesn't wear such good clothes or look so ornamental. He varies, of course, from time to time according to circumstances, that is to say, according to whether the English people think they'd like a Conservative or a Liberal for Prime Minister. At present he's a man called Willoughby—the Right Honorable Eustace Willoughby, M.P. By the way, Major, I told you there was sure to be a Member of Parliament on that steam yacht. I turned out to be right, you see, in spite of your sneers. I don't happen to have met this Chief Secretary, but they tell me he's not a bad sort of man in private life. I shall look forward to having some quiet chats with him while he's here."

"You won't get them," said the Major, in a determined tone. "I'm off at once."

"Whatever he is, he has nothing to do with us," said Sir Giles. "We've got our own business to see to. Come now, Mr. Meldon, before we go, you may as well tell us the truth about how you found that cave."

"There's no use my repeating what I've said before. I've told you all we know about the matter. If you don't choose to believe me, don't believe me. I can't help it."

Sir Giles scowled at him.

"Very well, Mr. Parson, if you are a parson, which I doubt. We've offered to run this business in partnership with you and to go shares. It was a fair offer and you've refused it. You won't have me for your friend. You'll find me a nasty enemy to deal with. I tell you straight I mean to handle that treasure before I leave the island. Come along, Langton."

Meldon went on deck with them, saw them into their punt, and waved a cheerful farewell as they rowed away. Sir Giles, who was rowing and faced the Spindrift, scowled in reply, and, to Meldon's intense delight, began to swear.

CHAPTER XV.

MAJOR KENT came on deck. He was agitated and showed signs of being in a hurry. Without speaking a word to Meldon he went to the end of the boom and began to unlace the cover of the mainsail. Meldon watched him take it off, roll it up, and stow it in the sail locker.

"What are you at now?" said Meldon.

"I'm going to get up sail and go home at once. I'll listen to no more talk from you, J. J. I've had too much of it already. My mind is made up. I'll not stay in this place another hour."

"Why?"

"Why?" said the Major, who was casting loose the ties which bound the mainsail to the boom. "Do you ask me why? Didn't you hear Higginbotham saying that the Chief Secretary is on the island? I'm not going to stay here to be made look like a fool over all the lies you've told. What could I say to the man if I met him?"

"Do you mean about the geological survey?"

"Yes I do. Of course I do. And about Sir Giles being a medical missionary or whatever the fool lie you told about him was. And about the National Board of Education building a school, Higginbotham is sure to tell him everything you've said."

"You may make your mind quite easy so far as the school is concerned. That is no business of the Chief Secretary's. The Education Board is the one thing in the country that he has no control over. That came out in Parliament some time ago, as you ought to remember."

"Well, what about the geological survey? You said I'd been sent here by the Chief Secretary and the Lord-Lieutenant. And what about Sir Giles and the tuberculosis?"

"Take one thing at a time, Major, like a good man, and don't confuse yourself. You're afraid he'll be angry because I said he sent you here to make a geological survey of the island. I assure you he won't even be surprised. You don't know these Cabinet Ministers, and, of course, it's hard for you to realize the life they lead. Now just listen to me. That man, Eustace Willoughby, spends his time mainly in receiving deputations. Hundreds and hundreds of deputations wait on him every week. There isn't a public body in the country, not so much as an association of licensed publicans, which doesn't send two or three deputations to each Chief Secretary. I expect he's receiving one this moment, headed by Thomas O'Flaherty Pat. To every deputation he says something—something nice and sympathetic. He must, you know. That's how he earns his salary. Now I put it to you as a sensible man, can he possibly recollect all the things he's said to all the deputations? He can't, of course. You put a bold face on it. Speak to him civilly, but without any show of timidity. Tell him that you went to him as part of a deputation from the Irish Incorporated Geological Surveyors' Institute, and that he sent you to this island. He won't know in the least what you're talking about, but he'll be afraid to give himself away by saying he doesn't remember. He'll believe what you say. He must."

"I don't mean to give him the chance. I'm going home."

"Well, if you funk it," said Meldon, "though I can't myself see what there is to be afraid of, I'll go on shore and talk to him. I'll settle the matter all right. You can trust me not to let you in for anything unpleasant."

"I wouldn't trust you an inch. I've trusted you a great deal too much already, and look at the fix I'm in. I'm going straight home."

"Think of the treasure."

"I wouldn't give you the chance of talking to the Chief Secretary for £500 down. You'd make things worse than they are at present, if that's possible."

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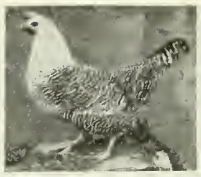
Campines Return $18,000



How Fred Kennedy on Four Acres of Land Induces Each Hen to Secure for Him $60.00 Worth of Orders a Year

By ANDREW McTAGGART

EIGHTEEN thousand dollars was the amount of the orders J. Fred. N. Kennedy received last year for his eggs and poultry. His plant consists of less than four acres, but it is made up of land that is admirably adapted to its purpose. Let no one imagine that Mr. Kennedy's fine results have come to him merely through the smile of kindly fortune. He is essentially a business man. He is a splendid example of an idealist, a student, and a thoroughly practical man under one hat. From his early boyhood he took to poultry culture. He was not content to run along the old easy-going lines of feeding his poultry whatever was handy, or with caring for them when there was nothing else to do. No, his method was to experiment till he found the method of culture that would bring results. He was not satisfied with accepting the other fellow's word for anything, but kept on with his tests till he found a method of his own that met his needs better than any other that he knew about.

So carefully did he do his work that when he was quite a boy he published an article stating exactly the cost of feeding a hen per year. This bit of poultry information attracted wide attention and went a long distance towards placing poultry feeding on a scientific basis. It is this fine study of the cost and performance of individuals that has made Mr. Kennedy's flock one of the wonders of the poultry world. There is no guess-work about him. He has come to the place where he is as sure as anyone can be what will be the result of certain lines of activity.

Like many a country boy, Mr. Kennedy heard the call of the city where he was engaged as a salesman. He stuck at this business till he reached the top of the hill in his chosen line. Here his business abilities had fine room for training and development. He learned the ways of the financial world and mastered them. But he was not for the city. He had seen urban life and had an opportunity of comparing it with the advantages of the country and decided that well as he was doing in the city, he could do better still in the country. So to the country he returned and cast in his fortune with his chickens. And he has no regrets for doing so.

A Champion Silver Campine.

A singularly brilliant success has been made of the poultry business by Mr. Kennedy, whose farm is the subject of this sketch. It will be noted that he was a business man first and that on going into the poultry work, he carried with him, his business methods and a practical judgment. His success is the result of knowing what the people want and then giving them their needs honestly and well put up. Farming to-day is largely a matter of salesmanship.

The neat residence erected by Mr. Kennedy on his poultry farm.

ELIMINATES GUESS-WORK.

His aim was to make poultry at once a science and a business. There was to be in it neither sentiment nor guess-work. And he has succeeded. On less than five acres of ground he has a turn-over that is far ahead of the income from many larger farms that have many times over the amount of capital invested.

He has an office, modern in its equipment in every particular. In addition he has a complete and up-to-date poultry library. He has no hesitation when it comes to expenditure for information. There is a splendid system of accounting and filing. One appreciates the need there is of this when, in the busy season, the mail amounts to over two hundred letters and orders per day. When one remembers, further, that these orders have run as high as $650, the need of strict accounting is all the more apparent.

Like most men who have attained conspicuous success, Mr. Kennedy has specialized in his work. The breed that he has made famous is one of the Mediterranean family—the Campines. This is a breed of ancient renown. Its origin is to be found on the La Campine plains of Belgium. The Belgians, with their keen eye for the practical, were intent upon securing a type of fowl that would fill the egg basket with large white eggs and plenty of them, and to a wonderful degree the Campines have succeeded in attaining this ideal. These birds are natural layers. They have bred for this purpose. In Mr. Kennedy's strain there is no loss of inherent good qualities by crossing. He has made improvements upon the strain as he found it, in the point of marking and feathering, but not at the price of utility. None of the old useful characteristics that made this strain famous in Europe have been lost though other features have been added that enhance the value of the strain.

THE REASONS FOR HIS LOVE.

These changes have been brought about gradually and according to strict scientific principles. The breed was removed to the hills of Wales where they were gradually inured to harder conditions than they were accustomed to in Belgium. They were then removed to America after they had the advantages of the careful breeding and selection of the British

Another type of Campine from the pens of Rev. E. Lewis Jones, England.

Bird's-eye view of the poultry farm of the Rev. E. Lewis Jones, England. He is hon. secy. and treas. of the Campine Club of Great Britain.

breeder. The result has been a bird of high prolificacy, vigorous constitution and rare beauty. They are hardy, active and precocious growers and layers. Withal, they are friendly and quite devoid of nervousness and timidity, the foes of high egg production.

In them is a fine combination of what takes the eye of the fancier, what pleases the man who is after the money and the man who delights in pet stock. They are good on a range, yet they flourish and improve in captivity.

Here is a description of these fowl in Mr. Kennedy's own words: "Their color is a silvery white in Silvers, and a golden ground in Goldens, overlaid by markings and barrings of black which have a rich, beetle green sheen, except the hackle, which-is a silvery white in the Silvers, and gold in the Goldens. The male birds have a medium-sized, even comb with about five serrations with the tip slightly following but standing clear of the neck. It should be fine, even and upright, and wide enough to be well set. The wattles are medium-sized and of fine texture. The ear-lobe satin white, smooth and of moderate size. The beak is horn color and the eyes should be nearly black. The rest of the body is barred. The black ground color should be about there or four times as wide as the white or gold bars, the black should be pure black free from gray and covered with a beautiful green sheen which in my opinion makes the bird. The color of the legs is leaden-blue."

GOOD TABLE BIRDS.

Not only are these birds good to look at and experts as layers but they make a first-class table bird. The test of a bird for the table is not its gross weight, but the amount of choice meat it carries. The Campines are fine-boned, and trimly built in such a way that they carry a large amount of breast meat, the sort that makes the ready sale.

These birds have the advantage of not being large eaters and so have small feed bills. As actual figures are always telling in this connection, we have the advantage of Mr. Kennedy's figures for the maintenance of an average of three hundred hens from January to October or for about two hundred and seventy-three days. During this period these birds consumed 5,809 pounds of dry mash which was kept before them all the time. Here are the constituents of the mash, together with the prices:

Oat flour, 1,532 pounds cost...	$26.04
Wheat shorts, 1,532 lbs.	19.15
Bran, 1,532 lbs.	17.62
Beef scrap or meal, 553 lbs...	14.94
Bone meal, 252 lbs.	5.70
Alfalfa meal, 250 lbs.	5.25
Charcoal, 100 lbs.	1.20
Salt, 57 lbs.	0.57
Total, 5,809 lbs. cost.....	$90.47

To this is to be added 600 lbs. of oyster shell costing about $3.60, 5,205 lbs. of straw was used for litter costing $37.85. They were fed in all about 6,751 lbs. of grain costing as follows:—

Wheat, 3,375 lbs. costing.....	$56.25
Cracked corn, 1,688 lbs.	25.32
Oats, 1,688 lbs. costing	19.86
Total, 6,571 lbs., costing.....	$101.43

During the first part of the season a ton of sugar beets was fed, costing $6.00. Later in the season sprouted oats were fed costing $12.80. Here, then is a summary of the cost for this particular season's feeding:—

5,809 lbs., dry mash	$90.47
6,751 lbs. grain	101.43
600 lbs. oyster shell	3.60
5,205 lbs. litter.....	37.85
1,088 lbs. oats for sprouting..	12.80
2,000 lbs. sugar beets	6.00
Total cost	$252.15

A PROFIT OF $3 PER BIRD.

And now for the returns: from these three hundred hens over two-thirds of which were imported, and nearly one-third of which were over two years old, the egg yield was 38,651. These if sold at the market rate of thirty-six cents per dozen (a very conservative estimate) would have given a return of $1,159.53. The total cost of feeding the birds was $252.15, which leaves a profit of $907.38, or a little over $3.00 per bird for nine months. This, surely is quite satisfactory. The cost of maintenance was about nine cents per month per fowl for food, showing that the Campine is not a costly feeder.

As has been pointed out Mr. Kennedy's hens are splendid layers of large, heavy eggs, laying as they do from 165 to 200 eggs per year, averaging from 26 to 30 ounces to the dozen. In addition to this his fowl are wonders from the point of appearance. They quite take the fancy of the poultry fancier. He never even dreams of accepting market prices for his fowl or for his eggs. He sells his best eggs for $2.50 per egg in the regular hatching season. He has refused $1,000 for a hen and male bird. Single orders for eggs and for birds run from $650 to $550. To be sure there are smaller orders, but these enable one to see how readily his aggregate of last hatching season ran up to $18,000.

IT IS GRAY MATTER THAT COUNTS.

Another of Mr. Kennedy's secrets is his power of judging the birds that will develop the best characteristics. When he has once secured a bird of unusual merit, he keeps it for his own breeding purposes. He is not one to rest content with the standard of excellence already attained by himself or by other poultry men, but he is continually setting himself poultry problems to work out. In this way he is discovering new features and establishing new qualities.

The hens are housed in pens of his own design, that are models of dryness and comfort. Should a hen show symptoms of sickness it is removed at once to a separate building where it is closely watched and from which there is no danger of the spread of sickness. The pens are thickly strewn with Belgium moss. One has but to see this in order to see the admirable litter it makes. A sufficient range does its part in keeping the fowls healthy and busy.

The brooder house is a separate building, heated by steam and electric lighted. These brooders are kept busy, as the demand for the fowl is so great that it seems impossible to overtake it. In this

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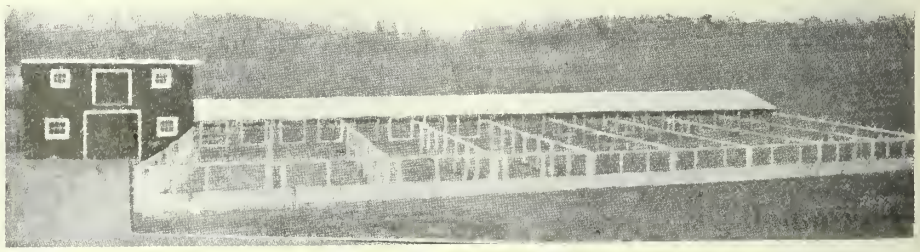


One view of the poultry sheds at Birch Cliff, the home of Mr. Kennedy.

The Farm Bride at Work

She Leaves a $1,200 Job and Carries Her Mental Energy Into Jim's Farming Operations

By GENEVIEVE

How many women can see a career worth while in keeping a home? In some circles the general attitude toward housework seems to be that it is something to be disposed of as quickly as possible and with the least effort,—and all the joy of doing something worth while is overlooked. This is why we get so much inspiration from the women on Canadian farms who through clever management of their homes and a well-balanced optimistic feeling toward even the commonplace tasks, are contributing largely to the happiness and progress of their families and neighbors.

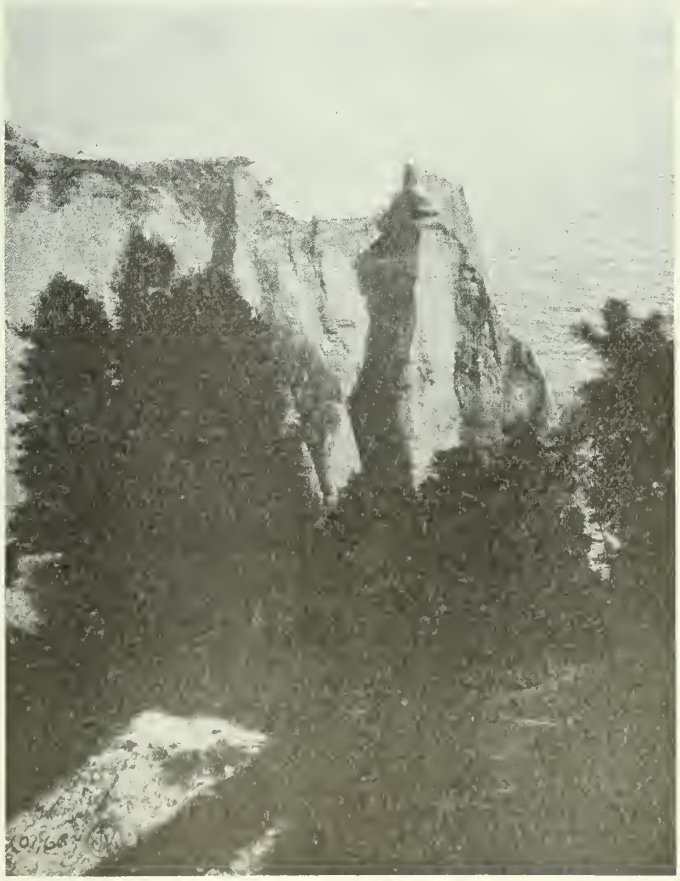
I HAVE always maintained that no man should ever try to farm alone. I think a woman is worth her board and clothes to any man—on a farm, and when my nephew brought home the news that he was going to settle down on a place fifty miles up country and marry a girl he'd met at school somewhere, I told him so. He looked at me with a strange little crinkle about his eyes and said, "She ought to be. She's worth twelve hundred a year where she is now."

That set me thinking. I began to wonder just how much a woman might be worth on a farm, but my figures didn't come anywhere near twelve hundred. Besides I have always had my doubts about these business and professional women as housekeepers. I read in a magazine once about how a trained nurse married a farmer and managed to get along with hardly any work at all. She got her washing and mending done at the co-operative laundry, and her bread and cake at a sanitary bakery financed and inspected by the local farmers' wives' league. Someone—a reporter, I suppose—went to visit her one afternoon in harvest time and found her resting in the hammock. She had been to visit the rural school in the morning. When five o'clock came she rang the bell to call her husband from the field—the hired hands must have boarded somewhere else—and then she commenced to get supper. It didn't take long because it was mostly ready on the dumb-waiter in the cellar. A "delicious cold supper" they called it—a salad of crisp lettuce leaves and hard cooked eggs, bread and butter, fresh strawberries and cream, and cake. It sounded very good but any woman who had cooked for harvest hands knows about how long they could stand on diet like this. Then when supper was over she wiped off the dishes with squares of tissue paper, covered them with cold water and left them till morning. If this was an average day's program you may be sure the work would soon ball up somewhere. Beside a nurse who is used to being on her feet nine or ten hours a day would soon feel the want of exercise at it. This story worried me a good deal. I had never seen Huldy and I wondered if she was one of the women who considered housework drudgery and who while they would work themselves sick at their "professions" can't see any profession at all in keeping a home.

So one Monday morning when I thought they'd had fair time to get settled, I went to visit them. James met me at the station and we got out to the farm before noon. I always remember that, for as Huldy ran down the side steps to meet us her cheeks were over-pink and the hum of victuals cooking sounded a real home song as we passed the kitchen door. That's something unusual to find in a bride's home. The new "star" is generally a shining collection of wedding presents, sort of embarrassed with itself, but this place already had what books would call "atmosphere." I was pleased with Huldy herself, too. She had on a light blue gingham dress and print apron, very neat and made to work in, but I could see, too, that she planned even her everyday clothes with a view to appearance. Of course that's pardonable in a bride and it's worth while for any woman.

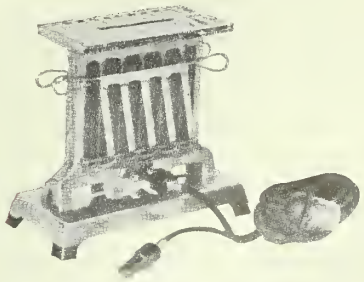
From the minute I set eyes on her dinner table, I knew that Huldy was on the right track. There was nothing that had taken hours of preparation, and almost everything had been grown on the farm. That's one thing where young housekeepers are likely to fall short—not making the best use of everything they have, and buying what they don't need. I remember she had stewed chicken and hot biscuits, mashed potatoes, beet salad and raspberry pie. I wondered if they had beets in the garden so early and asked her. "Oh no," she said. "I know we wouldn't be here in time to have much of a garden the first year so I canned a lot of things last summer." And I thought of the times that after forty years housekeeping I had floundered around when company came unexpected while even a salad could be kept on hand for emergencies. I have read a lot about the refining influence of fine spotless table linen and I agree with it all, but I also hold that the keeping of long heavy damask cloths immaculate, with dusty harvesters coming to the table three times a day can do as much as anything to wear out a woman's temper and strength. Huldy's everyday tablecloths were of soft, easily-laundered linen, and just large enough to come over the edge of the table all round. That was why she could afford to always have them clean.

And the same wholesome quality was kept up in all her meals. I didn't know then as I do now that she studied as hard



A scene taken from Scarboro bluffs. The country is full of such delights for the eye of the artist.

as she ever studied Greek or German how to keep her household healthy and happy, and that she had found the way they were



With an electric toaster breakfast may be prepared in a few minutes.

fed to have a lot to do with it. I don't mean that she spent hours with books about nutrition and diets; she did know something about that—but she seemed to sort of plan everything.

After dinner they wondered if I would not like to lie down and rest, but that wasn't what I came for, so in the afternoon Huldy showed me through the house. They hadn't built the house themselves and it didn't just suit them, but they had fixed it over a little. There had been three good-sized bedrooms upstairs and two small ones. One of these they had made into a bathroom, in the other they cut another window and fitted up for a den or office. They each had a writing desk in here. There was nothing elaborate about the rooms, but I couldn't forget the cleanness of them. There were no carpets, just rugs and the floors weren't hardwood either, only painted pine. The prettiest room of all had a light fawn-colored floor with walls painted a little lighter and a cream ceiling, and on the floor were three round plaited mats like I've seen in my mother's kitchen. I thought how sensible she was not to have any of her bedroom ceilings papered. Many a time when I have thought I couldn't afford to have a paperhanger, I've had my neck ache for a week after papering a ceiling, and then it often wasn't well done, but any one can put on a dull paint finish down to the molding and have it look right.

I was rather surprised to see that the bedroom curtains were all alike, just pretty white muslin sashes, but when she told me why, I wondered I had never thought of the idea before. She keeps an extra pair or two on hand to put up, and when she takes a pair down to wash she never has to leave the windows bare.

A POWER WASHER.

The same principle of having things comfortable and attractive and easy to

The electric toaster stove will cook eggs or fry bacon and toast bread at the same time.

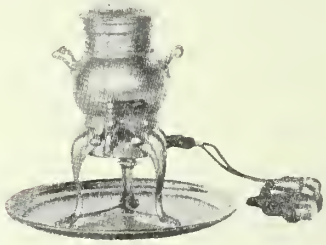
keep clean was carried out all through the house. You could wash any pillow-top in the parlor (they called it a living room and they spent most of their spare time there). They had inlaid linoleum on both the floors of the dining-room and kitchen because in the dining-room there was too much hard wear for a rug, and in a kitchen nothing is easier to the feet than a heavy linoleum.

I don't like to be too observant, but I had noticed that there was no washing on the line on Monday. Even so I was rather surprised to find an engine chugging and a power machine going full-tilt when I came downstairs Tuesday morning. Now we had farmed for forty years and hadn't felt that we could afford a power washer yet and I considered it my duty to speak to Huldy about it.

"I would have thought," I said "that James could have better afforded to help with the washing than to buy a machine like that right at the beginning."

"I don't think so," she answered as though she had reasoned it all out before. "As working manager of the place his time should be worth at least 50 cents an hour, and mine, well it should be worth half that. We had the engine anyway, and the machine just cost $35. At the rate of 75 cents' worth of labor saved every week it will pay for itself in less than a year."

I just stared. I had never reckoned my time worth anything.



A coffee percolator is always ready for work. No kindling of fire necessary here.

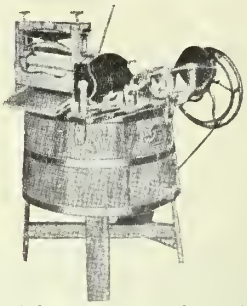
"And do you never wash on Monday?" I asked because I wanted to say something.

"Not very often. I guess it's because I don't like to be rushed. I hate to go to bed on Sunday night knowing that I have more to do on Monday than I can comfortably get through with. If I leave the washing till Tuesday I have lots of time on Monday to sort the clothes and put them to soak and get dinner nearly ready for Tuesday. Do you know," she finished seriously, "I believe half the worry of housekeeping would go if women wouldn't try to do too much at once. But then in ninety per cent. of the cases they haven't the first thing in the shape of help or equipment."

I warmed up with her philosophy as I remembered wash-days at home when the children were all the same size, and I agreed with her further when I saw her hang the last sock on the line, and in a fresh dress and apron take the meat and potatoes from the oven and the pudding from the refrigerator at dinner time.

If I thought the refrigerator unnecessary I didn't say anything this time. They had the ice for the dairy anyway I reckoned, and no doubt the refrigerator paid for itself in some way, if nothing more than as an economical luxury.

Naturally I was a little anxious to see that ironing done. A power-machine may make play of washing, but there isn't any



It doesn't take a washer long to pay for itself in the labor it saves.

way of smoothing out the ironing except the hand way. I noticed that the everyday sheets went on the beds that same night just as they were, and prejudiced as I was, I admit that they felt softer than if they had been pressed. I wanted to help with the ironing, but Huldy said it was too hot in the kitchen—when they could afford electricity they would have an electric iron with no fires to keep up and no trips back and forth from the stove. She sent me out to the porch to string beans, but I kept my eyes on the kitchen. But by the time she had taken out the underwear, which was all white crepe and Balbriggan, there wasn't much left, and I have learned since, that doing her own shirt-waists and dresses when she was a junior teacher taught her to consider the work of laundering a dress or shirt-waist when she was having it made.

I noticed that Huldy did have some regularity in the way she planned her week's work, although it seemed as though any day's programme could be shifted without upsetting the others. For instance she always kept Thursday for mending or doing odd jobs. Everything was so new yet that nothing needed mending, but there are always little odd fixings that get ahead of you if you haven't some time set apart for them. Some Thursdays she took a little extra time with her flowers.

But in the evening I met a new phase of the "professional housekeeper," when I found her at her desk checking up accounts. I thought they must belong to James at first but soon discovered that they were her own—household accounts she called them.

She explained them in detail and they were simple enough, but you can't teach old dogs new tricks and I've no notion of taking on bookkeeping with what I already have to do. Her plans, however, were interesting enough.

With a chafing dish a hot supper can be cooked on the table without any previous preparation.

"You see," she explained, "the returns from the dairy go for housekeeping ex-

Continued on Page 55.

On the Fighting Line in Riel's Day

How Riel Incited to Combat.---*Article 1*

By REV. R. G. MacBETH, M.A.
Author of "The Making of the Canadian West," etc. and formerly Lieutenant No. 1 Company, Winnipeg Light Infantry

EDITOR'S NOTE.—The accompanying article is the first of a series prepared by Rev. R. G. MacBeth for Farmer's Magazine, in which he will present interesting facts and reminiscences of that stirring time when the new Dominion of Canada faced its greatest crisis. Many of the incidents to be cited in this series have never before been made known to the public, so that Mr. MacBeth's work will have a distinct historical value. As one of the men who fought against Riel, he is writing from first-hand knowledge.

A picture of Riel's first council, reproduced from an old photograph. Riel is the centre figure in the group.

LOUIS RIEL, who had the unique but doubtful distinction of leading two western rebellions in a decade and a half, was not himself a fighting man. This is not saying that he was lacking in courage, for there are many things to evidence that he was no coward. But he had no capacity or desire for things military. His power lay in a remarkable talent for making effective inflammatory appeals to his compatriots. He did not fight himself, but he could put others into the fighting mood. Lacking the moral greatness, the consummate artistic skill, the mental force of Demosthenes, this Western outlaw must have possessed the Greek orator's intensity and his strange power to move others to action. For it will be remembered that an incomparable testimony to Demosthenes was given in the words: "We hear others speak and admire the beauty of their diction; we hear Demosthenes and we all cry out 'Let us go and fight Philip.'" Riel had a wonderful capacity for uttering philippics. Despite his extravagant, vain, erratic and mercenary characteristics, he could at any time set the French half-breeds of the West into excitement and violence as easily as he could set the autumn prairie on fire with his flint and steel.

And besides sending them on the warpath against impossible odds, he succeeded, for his own purposes, in the amazing task of turning them against the priests of the Roman Catholic Church, in which they had all been cradled and to which they had always been deeply devoted. In the second rebellion he assumed priestly as well as kingly authority, in token whereof he amended his name into Louis "David" Riel, Exovede, and, for the time, he persuaded his followers not only to fight the Dominion of Canada, but their Church as well. He made them believe that he was both civil and ecclesiastical head.

In this connection, of course, some things ought to be remembered as explaining his success. To begin with, Riel was in the real sense of the term a "born" agitator. His father, generally known as "the Miller of the Seine," near St. Boniface, was a fiery revolutionist who all his life long inveighed against the Hudson's Bay Company and any other authority that prevailed in the country. The rebel leader grew up in the atmosphere of the revolutionary spirit, and in that regard he was a rebel to the manner born. He had early learned how to play upon the emotions of men. Then it should not be forgotten that the young rebel received a good education, for one in his station, in the city of Montreal, so that when he returned West, at the very time the country was discussing proposals to enter Confederation, he sprang at once into the leadership of his uneducated and easily influenced fellow countrymen.

Moreover, the fact must not be overlooked that considerable blundering on the part of the Canadian authorities gave Riel his opportunity. Some blundering was more or less excusable, because even public men of all parties in Eastern Canada were blissfully ignorant of Western conditions. There was little communication between East and West except what percolated through the United States, and a good many Eastern men were under the impression that, outside of the Hudson's Bay Company employees, the land was occupied chiefly by Indians and coyotes who did not need to be consulted. So the Canadian authorities bought the West from the Hudson's Bay Company and started in to take possession. And Riel could make out a good case when he told the people, whose ancestors had been there nearly a century back, that their rights were to be taken away.

This was in 1869. Later on, in 1885, Riel was dealing with the same class of people and the same family connections, when he ignited and fanned the discontent of the South Saskatchewan half-

REFUSED COMMISSION.

Early in 1870 my father, Robert MacBeth, of Kildonan, received a large, blue envelope, containing a Magistrate Commission, signed by Louis Riel, President, and Louis Schmidt, Secretary of State, of the so-called Provisional Government. The old Highlander, whose forbears had been soldiers, took it back to Riel and told him he had no desire for such a document. He said to Riel that he did not recognize him or his government as having any authority to make appointments. Riel was much annoyed and threw the paper off the table, but did not dare to arrest or interfere with one so widely known.

breeds into the flames of rebellion. These people wanted to live on narrow farms bordering on the river as their ancestors and relatives had done on the Red, Assiniboine or the St. Lawrence. But the Government said they must accept the rectangular survey and settle on square farms. And Riel lashed them into fury by telling them that the Government was making assault on their social life and intended to uproot all their social customs, and when, added to this, he could remind them of the delays of local officialdom in regard to their land patents, the philippic of the agitator was complete and his followers were ready to fight.

A view of old Fort Garry. The inset is a recent photo of Rev. R. G. MacBeth.

Perhaps the most desperate and potentially dangerous act of Riel's career was the effort he made in 1885 to arouse the Indians and let them loose on defenceless settlements, with the horrors of the scalping knife and the torture. He knew the deadly possibilities of an Indian uprising. He knew that wars between the Indian tribes were not so far in the past, but that the warrior spirit was still easily stirred, and he knew that once the young braves were out for a taste of blood there was no limit to what they would do. No one knew better than Riel did the fearful result of the Indian uprisings in the Western States, and the same story might easily have been repeated on this side of the line. He knew well that a general hostile movement of the Indians would take perhaps years to quell. We know what trouble three or four chiefs made. What would it have been if the revolt of the savages had been widespread? Fortunately the influence of the missionaries laboring amongst them, the presence of a few mounted police here and there, and the swift rally of the Canadian troops, headed off what might have been an indescribable orgy of slaughter.

Moreover, Riel knew that all Governments had treated the Indians well and that they had no reason to revolt and bite the hands that fed them. Their reserves were "fair as gardens of the Lord," and the intention of the Government was to provide for every proper want of their wards. But here again it must be admitted that certain agents did not carry out the wishes of the Government and that the conduct of some agents was such as to make it easy for the runners of Riel to send the Indians, through the frenzy of the sun-dance, out on the path of murder and theft.

And so we go back to our first position and repeat that Riel had a perfect genius for getting other people to fight, while keeping strictly out of the fire zone himself. And hence in both rebellions he had his fighting man.

In 1869 there was no real fighting done, but Riel had his "adjutant-general," for, of course, the rebels were organized and well armed from the outset. This "adjutant-general" was Ambroise Lepine, a French half-breed, and one of the finest specimens of physical manhood I ever saw. Six feet two in his moccasins and built in splendid proportion, straight as a pine, and a leader of acknowledged prowess on the plains, Lepine had all the natural accessories of a soldier of fortune. He was in command of the mounted men who rode down to the boundary line, built a fence across the trail to Fort Garry as visible intimation to Governor McDougall that he was to keep out, and stayed there to see that he turned back and started for Ottawa. Then, as the winter was coming, Lepine, desiring quarters, rode at the head of his men to Fort Garry. which was defenceless, and took possession of this historic Hudson's Bay post, where these plainsmen helped themselves to everything in sight. A few days later Lepine directed the movement against the few loyalists who had gathered in Dr. Schultz's house nearby, and by overwhelming numbers compelled their bloodless surrender. Farther on there was a counter movement by loyalists who rendezvoused at Kildonan, and the aim of whose movement was to secure the release of the prisoners held by Riel. After some negotiations, this release was understood to be promised, and the loyalists from the Assiniboine started home, making a detour on the wintry prairie to avoid Fort Garry. Lepine with a body of his mounted men went out to intercept them, plunging through the snowdrifts with a dash which the rebel newspaper, *The New Nation*, said was characteristic of "the finest horsemen in the world." The loyalists were poorly armed, had hardly any ammunition, and were generally un-

Reproductions from paintings by Paul Wickson, used as illustrations in F. Douglas Reville's novel, "A Rebellion." They show scenes during the campaign against Riel. The inset is a drawing of Lepine, Riel's lieutenant.

A Canadian training camp in June.

prepared for any attack, and so they concluded that their leader, Major Boulton, was right in counseling non-resistance in the interests of possible peace. But, to their surprise, Lepine took them all prisoners and brought them to the fort. From personal conversation with some of these loyalists in after years, I am safe in saying that had they known they were to be taken prisoners, with the deplorable results that followed, they would have resisted to the death.

In the party thus arrested by Lepine were Major Boulton and Thomas Scott, both of whom were shortly afterwards sentenced to death by Riel's court-martial. Boulton's alleged crime was his leading of a movement against the rebel chief. Boulton's life was spared, partly at the request of Donald A. Smith (afterwards Strathcona), who had arrived from Ottawa as Commissioner from the Canadian Government, but chiefly at the intercession of Mr. John (afterwards Senator) and Mrs. Sutherland, of Kildonan, whose son had been shot by one of Riel's spies near the loyalist rendezvous a few days before. But all efforts to save Thomas Scott were unavailing, though the same parties tried, and, in addition, the local Protestant clergy, especially the Rev. George Young, the Methodist minister who attended Scott up to the last, he being a member of that Church. Scott was a young Irish-Canadian from Ontario who had been working on the Dawson Road. He was athletic and somewhat jocular, because it is remembered that he took part in ducking a contractor who was inclined to be overbearing. It is said Scott used to throw some of Riel's guards about when they came in with the rations; but he was just an ordinary light-hearted, energetic lad who was ready for a bout at any time. Riel determined on his death and nothing would alter his decision, though up to the last it was hoped he would relent. But he expected Scott's death would terrorize the community, and so on the 4th March, 1870, this young man was shot by a half-drunken firing party outside the front gate of the fort. Lepine does not seem to have relished his share in this dark tragedy, but the will of his chief was law. The effect of this murder was to completely estrange from Riel all but his abject followers..

A somewhat curious illustration of what Carlyle calls "the irony of fate" comes in connection with this part of Riel's career. Major Boulton, who escaped death by "the skin of his teeth," as above recorded, was, fifteen years later, the leader of Boulton's Scouts, and the first to meet Riel's forces in the battle of Fish Creek. And Captain George Young, of Winnipeg, the son of the man who had pleaded in vain with Riel for Scott's life in 1870, was in 1885 placed by General Middleton in command of the escort that took Riel to Regina, the place of his scaffold.

From what I knew of Ambroise Lepine, I think it quite likely that he would have made a stand against Wolseley in August of 1870 if Riel had given the word. But the rebel chief realized that discretion was the better part of valor, and so he was across the Assiniboine and on his way to the international boundary line ere Wolseley reached the rear gate of old Fort Garry. It can be said to Lepine's credit that he did not run away, but after a few days' absence went home to his farm up the Red River. Shortly after Wolseley's coming a warrant was sworn out for his arrest for complicity in the murder of Scott. Two men went to arrest him at his house at night. The redoubtable plainsman took a look at them and said he could knock their heads together, but that they were only doing their duty and he would go with them. He was put on trial before Chief Justice E. B. Wood, and, though brilliantly defended by Chapleau, of Quebec, was convicted and sentenced to be hanged. This sentence was afterwards commuted to imprisonment for a term, with the permanent forfeiture of his civil rights. And so Riel's adjutant-general subsided into comparative obscurity.

Meanwhile, Riel had gone to Montana, and was found there fifteen years later teaching in an industrial school, when the discontented half-breeds of the South Saskatchewan sent for him to come back and help them secure the rights which they felt were in jeopardy. The inordinate vanity of the man was flattered by this attention. He came, and almost immediately counseled violence, assuring his followers that they could sweep the Mounted Police and the Government and the Hudson's Bay Company out of the country. And here again he found in the famous buffalo hunter, Gabriel Dumont, a fighting man, with genius for guerrilla leadership and with the prowess and personality that could attract a devoted following. Our next article will study the astonishing sequel.

Home Mixing of Fertilizers

If the farmer sufficiently understands the use and properties of the simple fertilizers, it will be of decided benefit to him to mix his own fertilizers according to the requirements of his soil and his crops.

An especially good bulletin by the chemist of the Ontario Agricultural College has been issued by the Ontario Department of Agriculture and can be had by every farmer who applies for it to the Department of Agriculture, Toronto.

Helping Out the Common School

Let the Boys and Girls Take Interest in the Local Fairs and Exhibitions

By ALBERTA M. KEPPER

This is the vacation time. The pupils of our public schools with a few exceptions in parts of Western Canada where summer schools are conducted, are enjoying the rest and change on the farm. To the real boy and girl there is no such thing as standing still, as every parent and teacher must know. The young minds are constantly showing particular bents and he is a wise director, be he parent or teacher, who trains the child along his natural, normal tendencies.

The child, whether five years or fifteen, is a sensitive person. He recognizes principles to a greater degree than his elders imagine. A father or teacher may think that he is hiding his own defects, but he never does. The child is wiser than we know. Particularly interesting are the agricultural shows and country fairs which can be made an inspiring education to the farm boy and girl. The writer of this article is a farmer's wife and a good mother.

ALTHOUGH there is a wide movement for higher as well as more practical education for rural young people throughout Canada, and in places the consolidated school is making possible higher learning while living at home which is ideal because of home influence when the children's need is greatest, yet in the great majority of communities this is a dream. The future will make it come true. In the meantime there is a steady and increasing flow of bright young people over the threshold into the wide, wide world, poorly equipped.

The lack of education, which is the foundation to build for life, is more keenly felt to-day than before. We do not accomplish very much with physical effort alone; it must be directed with keen mentality.

Can parents afford to neglect the mental development of the child because of environs? Distance, lack of money, too much to do are in turn urged as causes why but meager schooling is offered young people, while the great opportunity to supplement what the school-room would offer, is overlooked. This is vital. And it is up to the rural mothers to provide what is lacking.

It has been charged that country people cannot enjoy an hour with a learned man, nor appreciate high-class music or art because they are not educated up to it. It is "over their heads." Then, as one country woman to another, I say, raise the heads of our young people until they meet talent on its own level. They may not all do the things that particularly gifted ones achieve, but place of birth and breeding should not be the dividing line. Our young people may be denied travel, but books are cheaper and by this means the traveler with camera and gifted pen brings to us the choicest the world holds.

A country girl was asked if the city did not awe her on visiting it the first time. "Why, no," she answered, surprised at the question. "I had been reading of it and found it much as I expected."

National and international fairs and those of less extent are educations. In the exhibits are garnered the choicest productions of the district from whence it came. Here is blooded live stock. Our country-bred boy will, if he has had access to our best agricultural magazines, recognize the Herefords, Shorthorns, the different dairy breeds, likely as not, even to placing representatives of certain families. In the horse show it will be the same. Percheron, Clydesdale, Belgium—though he has seen none but grades previously, are not strangers to him. He will view their age, study them. The fair means much to him because all along he has been laying a foundation that enables him to grasp and retain all that is best in the animals before him. Likewise he will find the defects and carry away a clear idea of

the perfect representative of the breed. This he may never produce; but it will serve as the ideal towards which he struggles until the goal is very near. Ideals are the guiding star to success.

It is essential to good citizenship that the boy be interested and have understanding of political issues, that he may cast his vote, not as father does simply because father does, but because he has studied and found the choice in knowledge. The library table should hold stories that make us laugh. Good medicine! And a laugh shared is a kind of cement that holds families together. We must supply the home with amusement. We want well-rounded people to go out from our rooftree.

There must be music. If that talent is denied us, we may cultivate our ears until the really good gives pleasure. The phonograph fills a place in many homes that otherwise know no music. In the better machines we get a softness and sweetness of tone and the mechanical grind is overcome. If a little thrift is exercised, like giving up some useless extravagance or stopping other little leaks in the income, enough may be saved in a short while to bring the world's most famous singers into the isolated homes. These records are high-priced; but not more so than is often paid for a single admission to grand opera, and the records entertain us again and again and are a pleasure to our friends.

Nor does one need to make a great outlay to get really enjoyable hours. Orchestras, violin, and other instruments, and many old-time songs by beautiful voices are among the low in price. Every country has patriotic and folk songs dear to the hearts of its people and these are low-priced, even when sung by good voices. Plantation melodies appeal particularly to Americans.

AN IMMENSE BOSTON FERN.

By A. D. Dart.

One of the largest Boston ferns ever reported is shown in the accompanying photograph. This variety is sometimes called the "Fountain Fern," owing to its graceful drooping manner of growth. The plant has been nourished twice a week with a weak solution of "Fish Scrap" water—the scrap is obtained from a "Manhattan" factory, and is the dry product after the oil has been extracted from the fish. The proportion used is two tablespoons full of scrap to a gallon of water.

The scrap should be ground fine, and the water well shaken just before applying. The plant is five years old and has never been repotted but once. Before potting all plants it is well to put a piece of coarse muslin over the hole in the bottom before putting in the bits of stone; this keeps the drainage good and prevents the earth from washing away.

Very cold water should not be used on ferns, and young and tender plants should be protected from heavy rains and strong winds. Maidenhair ferns will not thrive in a gas-lighted or heated room. This variety needs special care for if once permitted to become very dry, the fronds shrivel quickly.

A Review of Farm Literature

The Best Things Taken From the World's Leading Farm and Scientific Journals and Condensed Here For Our Busy Readers.

Increasing Shortage of Beef

What One of the Best Informed U.S. Writers Thinks of the Situation

Written by J. E. P. in The Breeder's Gazette.

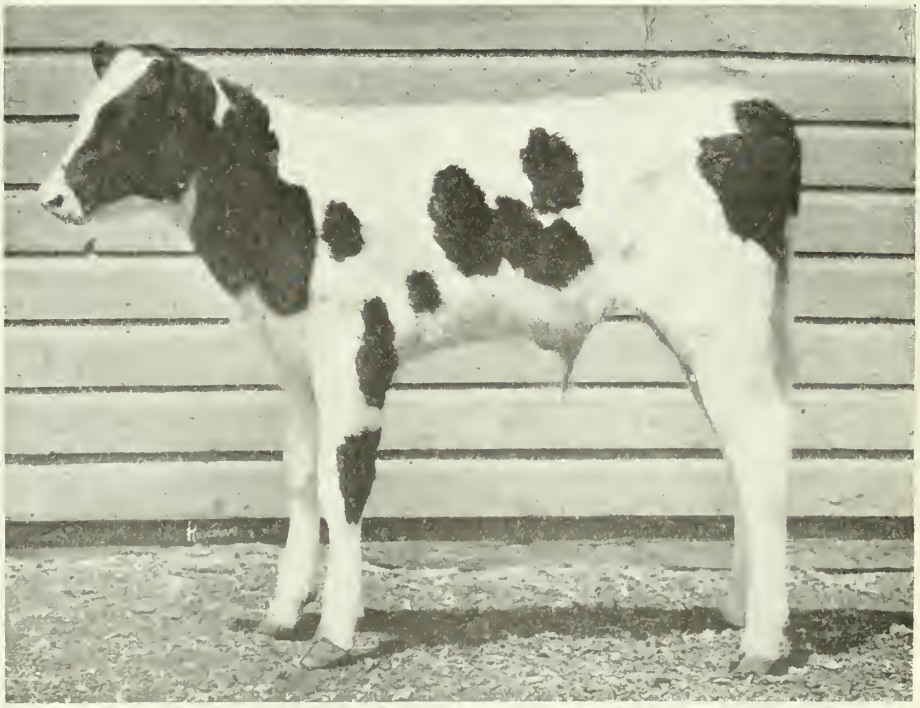
BEEF shortage continues to assert itself in emphatic fashion. Comparisons with the corresponding period of 1913 are illogical because scarcity was becoming apparent a year ago. Present prospects are that the first six months of 1914 will develop a supply shrinkage of close to 700,000 head at the six Western markets—Chicago, Kansas City, Omaha, St. Louis, St. Joseph and Sioux City—compared with the corresponding half-year in 1911. The deficiency on that basis of comparison is already 640,000 and growing weekly. Fort Worth, which a few weeks ago promised to produce a gain of over 80,000 compared with last year, now exhibits a decrease, owing to partial cessation of Mexican imports and a disappointing run of Texans. Canada is sending few cattle; Toronto and Montreal are as high as Buffalo, the latter market having gone to an $8.50 to $9 basis for fat steers. The only source of increased supply is from Pennsylvania feedlots, where owing to an influx of Canadian stockers last fall winter finishing operations have been on a somewhat more extensive scale than last season.

Statistics are easily analyzed. There was a deficiency during the first five months of the current year of 268,455 head, compared with the same period in 1913, and of this approximately 200,000 are to be credited to three river markets —Kansas City, St. Louis and St. Joseph. To some extent this deficiency is abnormal, being due to feed shortage in Missouri and Kansas consequent on last summer's drouth, which materially curtailed winter feeding operations, but there would have been a substantial decrease even had the 1913 corn crop been normal. This is demonstrated by a five-month decrease at Chicago of over 50,000 despite the fact that Iowa was full of feed. The Chicago decrease was due in no small measure to scarcity of stock cattle which prompted Iowa to put in sheep. The somewhat startling decrease at St. Louis may be at least partly attributed to a clean-up of southern stock, due to persistent use of the dragnet in past seasons below the Ohio River, a process made profitable by the somewhat spectacular advance in values of low-grade stock. The general shortage is evidenced by a weekly decrease at western markets during the first five months of about 49,000 head, compared with the plenitude period of 1911. For many weeks in succession these markets recorded weekly arrivals in the aggregate of less than 100,000 head.

Bulk of the beef crop of the past five months was made in Chicago territory. At that market the proportion of cows, heifers, bulls and stock cattle was the highest in trade history, steers preponderating at all times. On the other hand, beef was abnormally scarce in Missouri River territory and the long cavalcade of dressed beef trains that formerly rolled eastward from the river slaughtering points was not only erased from railroad time cards, but Chicago was required to supply local deficiencies. Packers have been furnishing beef to distributers at scores of western points where no cattle were available to keep local slaughterhouses in operation and in the south-west packers sent solicitors into the country in search of cattle. The normal disparity between Chicago and Missouri River prices was effaced and many a load of beef cattle went to Kansas City and other western points out of Chicago territory. This would not have been recorded had Kansas feeding conditions been normal, but the fact must not be ignored that beef-making in that quarter was materially augmented during the winter months by a beneficent season's producing abundance of wheat-field pastures.

SCARCITY OF YOUNG CATTLE.

No process of reckoning can conceal the fact that current beef shortage is due largely to scarcity of young cattle. Cost of filling feedlots last fall was unprecedented even with a sadly deficient corn crop, hence concern as to how this process is to be accomplished next fall should nature put in operation the rule that a fat year follows a lean one. The April and May scramble for stock cattle at the highest prices on record affords premonition of what is likely to happen in such an emergency. That the big run of Canadian stockers into territory east of Chicago last fall cannot be repeated is everybody's secret and west of the Mis-



A $20,000 dairy calf. King Segis Pontiac Chicago is the name of the Holstein calf which cost Mr. Spencer Otis, sr., and his party on the dairy farm at Barrington, Illinois, $20,000 at the Western Breeders' consignment sale at the Chicago yards last month. This is the highest price ever paid at a public sale for a dairy animal. The calf will be insured for its full amount, and a special barn will be built for it. Speaking of the price, one of the buyers with a pencil and paper explained how he would make $200,000 with this calf in five years.

souri River clamor for stockers is even more insistent than in the cornbelt. Evidently the real shortage has not yet been uncovered.

Chicago's May cattle receipts were but 161,526, whereas as far back as 1906 that market received 264,058 in May. Kansas City had only 81,623 in May, while in 1906 arrivals at that market were 154,000. The May Omaha run was 55,528, or the lightest since 1903 and as far back as 1890 that market was the recipient of over 62,000 head during the fifth month. In May, 1906, Omaha received 91,881 cattle and in 1911 May supply at that point was 84,336. A notable phase of the deficiency is in the case of quarantined cattle from below the tick line. May receipts of such stock at Kansas City were only 349 carloads, while in 1910 that month produced 1,177 carloads and receipts from that source have been steadily dwindling since. Contention that quarantined trade has been diverted to Fort Worth is not illogical, but the May run at the Texas market despite Mexican imports was short enough to discredit the theory.

The prospect is no more consoling than the record, either to the feeder, the commission interest, the killer, the distributer, or the consumer. That the big summer and fall run of cornfed cattle of last year will not be duplicated is an assertion not open to dispute. The trans-Missouri region is more interested in reinstating depleted herds than gathering beef, although it is possible that more fat cattle may come out of the Western grazing region than last year. But the serious phase of the situation is the dearth of young cattle, which has put the stocker and feeder values practically on a fat cattle basis, rendering investment for finishing purposes highly speculative. Yearlings costing anywhere from $8.50 per cwt. have a chance to outgrow what appears to be a risky investment, but the task of passing shrinks, freights and other charges on 1,000 to 1,100-pound steers for finishing purposes at present prices appears to be a hopeless one. It is not surprising that recent experience is prompting feeders who have never boasted of a cow among their possessions to display interest in the breeding industry.

Factors Influencing Size of Farms

Will It be a Large Farm or a Small Farm, a Dairy Farm, a Truck Farm, or a Wheat Farm?

From S. G. Rubinow's article in Hoard's Dairyman.

THE most empirical factor in deciding the size of his farm must be the preferential judgment of the individual as to what kind of a farm he wants, supplemented by a great many other factors, many of which it is impossible for him to control. Does he want a dry farm in Montana? Or an irrigated farm in Utah? Is he looking for a truck farm in New Jersey? Will he buy a winter wheat farm in Nebraska? How would a dairy farm in Wisconsin appeal to him. Would he consider a corn belt farm in Iowa? Is he thinking of a spring wheat farm in Minnesota? The type of farm influences the size of the farm in so far as it represents a more or less intensive form of farming. We would naturally expect a larger acreage with more extensive methods of farming and a smaller acreage corresponding to more intensive methods of tillage. That this is true may be shown by the tables that Warren of New York has compiled, showing the variation in the size of farms in the United States for a number of decades. In considering this table, we must recognize the fact that with the exhaustion of the best land, farms are getting smaller and smaller, as they approach more and more a state of intensive farming. Warren has this to say:—In 1850, the average size of the farm was 203 acres; in 1860, 199 acres; in 1870, 153 acres; in 1880, 134 acres; in 1890, 147 acres; in 1900, —— acres; in 1910, 138 acres.

One of the most important factors that influence the size of farms is the question of profit in its association with capital. Just how much, specifically and dogmatically, it is impossible to say. Between the extremes, represented by the small farm that is too small to return a profit on the investment, and the larger farm which is too large to yield a profit on its tremendous investments, must lie the best size of a farm, from which, all other things being equal, the greatest returns per unit of investment are possible. Warren's investigations show that farms of a 200-acreage are returning a profit of $1,000 or more. The recent investigation, carried on by D. H. Otis, of Wisconsin, demonstrates that farms of 200 acres are giving a profit of $4,000 and more. If the discrepancy in these two conclusions does nothing else, it proves at any rate that there is something more than the matter of capital, profit, and acreage that will determine for you how large or small should be your farm. Combining the acreage, the capital, and the profits, or managerial income, Otis says that:

	Ave. for 13 farms in one county	Ave. for the 150 farms in the state	Ave. for the best 10 farms	Ave. for the poorest 10 farms
Acreage	161	165	205.5	149.6
Capital	$28,844.31	$23,087.55	$34,053.23	$18,506.01
Profits	1754.52	1289.88	4520.54	659.46

It is evident that the larger the capital, the greater the profit and the larger the acreage in proportion. But what is the ratio between these three factors? With a limited amount of capital, what is the best size of a farm?

EFFICIENCY OF LABOR.

The efficiency of labor has always been a factor that has determined to some extent the size of the undertaking in farming operations. The more efficient that labor is and the greater the steady supply of labor, the greater, of course, its utilization. On the larger farm, labor must cost less in terms of wages than it does on the smaller farm. There is more opportunity for labor to have constant employment on the larger farms, and operations can be so spread out and supplementary to one another so as to secure the greatest returns for the labor expenditure invested. Again, Otis says that where:

	Ave. for 13 farms in one county	Ave. for the 150 farms in the state	Ave. for the best 10 farms	Ave. for the poorest 10 farms
Acreage	161	165	205.5	149.6
No. of men	3.02	2.57	3.22	2.37

By comparing both tables we see that the greatest amount of labor is where we expected to find it, on the larger farms. But should we conclude that three men are necessary for running 200 acres in order to produce the largest profits? If we do, what about the average size farm in the United States, consisting of 138 acres?

The maintenance of heavy machinery, especially power machinery, is too expensive on the small farm. Up to a certain limit, the use of horse labor and machinery induces a larger acreage. All other factors being equal, or not taken into consideration, the small farm cannot compete with the larger farm from the point of view of returns on horse labor and machinery. Warren thinks that a farm of 200 acres warrants the introduction of machinery. This statement coincides with Otis' results that:

	Ave. for 13 farms in one county	Ave. for the 150 farms in the state	Ave. for the best 10 farms	Ave. for the poorest 10 farms
Acreage	161	165	205.5	149.6
Operating capital	$8,246.08	$5,541.06	$9,401.73	$3,729.97
No. horses	5.3	5.21	6.25	5.25
No. cows	20.3	17.58	31.8	11.75
No. ewes	31.5	20.39	24.85	18.33
No. brood sows	6.85	6.65	7.78	4.72
The income	$1,754.72	$1,289.88	$4,520.54	$—659.46

Of course, all through this discussion Warren points strongly to the 200-acre farm, the family size farm, as being the best from the point of view of returns. But with the introduction of great amounts of capital, the acreage can be increased almost indefinitely, if the other factors are not disturbed. One of the factors that stops the march of capital in its increase of the size of the farm is the individuality of the man himself. If a table were made from Warren's discussion of the type of farming in reference to the size of the farm, it would state that:

In the South, a cotton farm of 25 acres on the average is satisfactory. In New Jersey, a truck farm of 30 to 50 acres; in Utah, an irrigated farm of 50 acres; in New York, a hilly dairy farm of 150 acres; in Illinois, a dairy farm of 130

acres; in Iowa, a corn belt farm of 175-500 acres; in Nebraska, a hard winter wheat farm, 320 acres; in Minnesota, a spring wheat farm of 320 acres; in Kansas, dry farming farm of 500 and more. To which we might add Otis' results that in Wisconsin, a dairy farm of 205 acres on the average is satisfactory.

Sunstroke or Head Exhaustion

Preventives and Treatment for Prostration

Condensed from Dr. Lerrigo's article in the Country Gentleman.

YOU will find the first recorded case of heatstroke in II Kings iv, 18, 19:

"And when the child was grown, it fell on a day, that he went out to his father to the reapers.

"And he said unto his father, My head, my head. And he said to a lad, Carry him to his mother."

You know the sequel: The child sat on her knees until noon and died. There was a further and happier sequel, but it has nothing to do with the treatment of this case. These parents did the best they knew, but we know a little better now.

The child should never have been carried a long journey through the sun's heat. He should have been laid right there in the shade of a tree, his head raised a little and water brought from the brook and applied liberally to his hot skin, especially to head and spine.

His mother meantime could have been fetched. But she probably entertained the irrational idea, which has been handed down to this present day—every mother has heard it and an unfortunately large number believe it—that a child suffering with any kind of head injury or trouble should not be allowed to go to sleep for fear he will never waken. So she made him sit on her knees and tried to keep him awake instead of encouraging rest.

I have met this theory ever since my earliest days of practice. It probably originated from certain conditions that sometimes follow serious cranial injuries. A child suffers a blow or a fall on the head; he cries, gets over it, seems better, then goes to sleep and possibly never wakens. The deduction is obvious, though incorrect—the child should not have been allowed to sleep.

What really happens is this: The head is struck, a small bloodvessel ruptures in the brain, the child cries, the first pain and shock pass and the child feels better. All this time, however, occurs a persistent oozing of blood that gradually forms a clot and causes pressure on the brain; the child falls into a stupor and possibly dies.

As a matter of fact, no effort short of a surgical operation could prevent that stupor—it was due to the pressure of the clot; a natural sleep, indeed, would have been the most hopeful symptom possible. But this notion has led many a mother to torture her little one into wakefulness after a head injury or any suspicion of head trouble such as heatstroke. By all means let persons so afflicted go to sleep if they desire.

It is necessary to distinguish between heatstroke and heat exhaustion. Heatstroke, often referred to as heat apoplexy, sunstroke or thermic fever, is induced by exposure to the direct rays of the sun. It may come on very quickly and cause instant death.

Usually it is preceded by some weakness and dizziness, with a sense of oppression. This is a signal to cease all activity and seek rest in a cool place; if disregarded, unconsciousness soon follows. The breathing is rapid and labored and the pulse is weak and irregular, the body temperature is very high and may climb to one hundred and ten degrees. When you reflect that a temperature of one hundred and five or one hundred and six is looked upon as very dangerous in our worst fevers, you will appreciate the significance of this. The face is reddened and the whole body seems afire. The pupils of the eyes are contracted. Convulsions may occur.

Heat exhaustion is more common and presents different symptoms. It is not dependent upon direct exposure to the sun, but many cases occur during indoor work in a close, hot atmosphere—an engine room, a close hayloft or a grain elevator, for instance. The symptoms are those of general collapse. Instead of the skin's being hot and dry, it is pale, moist and cool. The temperature is below normal, the pulse is rapid and weak, the mind is dazed rather than unconscious.

It is important to distinguish clearly between these two forms of heat sickness, because the treatment you must give differs widely, as is easily apparent from the nature of the symptoms. In the heatstroke, with its congested face and dry, hot skin, you will do everything possible to reduce body temperature. You will get your patient in the coolest convenient place and make cooling applications of ice and water to the head and spine as the very first step of the treatment.

But such treatment would not do at all for heat exhaustion, with its cool, clammy skin and general prostration. Here the body must be dried and warmed. Gentle rubbing of the extremities toward the heart will be helpful, and, if the patient can swallow, a hot drink will have a stimulating effect.

There is no reason for confusion as to which treatment is needed—a touch of the skin will tell you. And there is one line of treatment, very important indeed, that is called for in either case—the body must be at absolute rest. As the energies revive they must not be dissipated by efforts of the patient to get up for any purpose whatever. You should insist upon absolute quiet for an extended period.

NEED OF ABSOLUTE REST.

I remember one very hot Fourth of July. The hot wind was comparable to nothing so much as to the blast of heat that strikes your face when you open the oven door. Driving past a picnic ground I was stopped by loud cries of "Doctor!" Two husky young fellows were slowly parading back and forth, supporting between them the almost lifeless form of a poor, draggled mortal who was using what little consciousness remained to beg that he be allowed to lie down.

Whether they were influenced by the old idea that an injured child must be kept awake, or whether there lurked in their minds old stories of travelers whipped onward to save them from perishing in

A haying scene on the farm of Mr. Geo. Young, Western Canada. His crop of hay last year amounted to 400 tons.

the snow, I did not ask. They were doing their best and did not realize that they could do no worse; that the limp, moist victim might slip into an eternal sleep at any moment in spite of them.

I got him down in a shady spot, had most of his clothing stripped from him and a vigorous rubbing instituted at once. They had some hot water, and as soon as he was sufficiently revived I had him swallow a cupful. Then I gave my remedies and left him in peace, with strict orders that he was not to be moved until sundown.

Heat exhaustion usually gives some warning. Perspiration is checked, for one thing. Every farmer knows that when his horse stops sweating it is time to take the harness off and get busy with him. But let me suggest that in your own case you do not wait until this stage. There are earlier symptoms—your vision is uncertain, perhaps black spots dance before your eyes, you feel dizzy and may stagger.

If you feel anything of this kind when at work on a close, hot day, don't spend any time bothering about the importance of your job; quit it at once. Without any desire to discourage industry, I want to say emphatically that no work is important enough to warrant a heatstroke.

Moderation in diet is wise at any time, but especially so in excessively hot weather. It is not well to work hard immediately after eating. A half an hour's rest is time well spent.

The question of drinking is important. It is proper to drink freely of cool but not ice-cold water. Alcohol is especially harmful, as it tends to suppression of the free action of the skin.

Harvesting and Marketing Small Fruits

Some Details about the Business that will be Useful to the Fruit-growers

From The Fruitgrower and Farmer, of St. Joseph, Missouri.

I HAVE grown small fruits for the market for a good many years, and will say that in order to receive the greatest returns from the fruit, quality is the first consideration; the manner in which it is packed, the second, and the package, the third. There is always a good demand for a first-class article, but it must be first class. One of the reasons why markets become glutted is because they are flooded with fruit of inferior quality. Berries that are small, green and knotty should never be placed upon the market. Packages that are rough, containing holes and knots, should never be used for carrying fruit. It takes care to harvest fruit that is to go on the market since it must stand handling and be on exhibition for some time before cared for by the consumer or canner.

When the crop is being handled we should feel that we are moving something precious and should do the work carefully. One may give too much care to the harvesting and marketing of a crop that has been carelessly grown as in this case it doesn't amount to much anyway, but when we have taken great care and worked hard and first-class fruit is awarded us for our efforts, then we cannot consistently harvest and market it in a careless manner.

In harvesting the fruit I never obtain the services of very small children. They usually pick with one hand and hold a box with the other, and as one hand becomes tired they will change the box to the other, thus staining the box. Then, again, unless closely watched they will run here and there, picking only where the berries are thickest.

If it is possible for me to do so, I always obtain experienced pickers that have picked for me in the past. They understand just how I want the work done and I am thus saved much valuable time at the shed.

Two pickers are assigned a row and made to complete that row before allowed to go on another. By having two pickers on a row, fruit that is overlooked by one is found by the other. My picking crates are made from old goods boxes and hold six and eight quarts. These are put away in the shed when the picking season is over. Each picker has its own crate. Care is taken to see that the crates are strong so as not to break and spill the fruit while it is being carried to the shed.

THE PACKING SHED.

My packing shed is thirty feet long and fifteen feet wide. I have a wide platform or table all around it except the front end. To keep sun, wind and rain out, heavy curtains are used instead of plank and the top is covered with roofing. The curtain on the north side is kept up except when it is raining or the wind blowing. The other curtains are kept up or down to let in the breeze and keep out sunshine, wind or rain as conditions may require throughout the day. I have my pickers press each box down slightly and fill up all hollow places with good, nice fruit. By doing this the fruit is about on a level with the top of the box when it arrives at its destination and soon attracts the eye of a customer. Berries must never be allowed to stand in the sun after being harvested, as it is injurious to their keeping qualities and they will go on the market in a bad condition.

I never ship berries that took a rain while ripe. They are apt to sour before they arrive at destination, and will seldom pay expenses. I usually allow my pickers to harvest these for canning purposes or for wine making. In my next picking I am careful not to put in any soft berries that might have been left from the previous picking. I examine each box carefully, and if I find any inferior fruit I do not attempt to remove it with my fingers. I always have a number of picks made for this purpose and of free access. When I have filled a case it is carefully nailed up, my name and address is stamped (not written) on each end, also the name and address of the firm to whom I intend to ship. Commission firms will furnish rubber stamps made to order free of charge when a shipper is doing business with them and they will also send an ink pad free. By the shipper stamping his own name and address and that of the firm, it gives the package a better appearance and there will be no mistake made in remitting.

As each case is filled it is put in a cool place in which it is kept till a load is packed. Then the load is taken to the shipping station at once. I use a canvas cover to protect the berries from the sun while transporting to the depot. My wagon has springs on the bolsters. Where a man has no spring wagon bolster springs are an absolute necessity, for without them the product, especially if the roads are not good and the fruit has to be taken any distance, will be jammed and made very unpresentable.

THE TICKET SYSTEM OF PAYING PICKERS.

Another point in connection with the work which calls for attention is the method of keeping an account of the quarts or pints of fruit each picker brings to the shed. I use tickets for the purpose which I have printed to my order. If one brings six quarts he is handed a six-quart ticket which represents money to him, as at any time he wishes his tickets "cashed" I settle with him on the basis of the number of tickets he produces.

Another method is to have a card that is punched each time the picker brings his fruit to the shed, and from the card the employer is able to settle. Certain things are demanded of the pickers, and it is important to see that they live up to these demands. There are very few pickers who will not do as near as they know how what is demanded of them. A little expense in keeping lemonade in the shed for them to drink is money well spent, especially when the pickers must work all day.

Attractiveness is a very essential feature in getting the best price for fruit of any kind. In many instances it can be safely stated that the appearance—the attractive look to the eye—is of as great importance as the actual worth of the goods. Many consumers are caught more readily by the appearance of the fruit than by the eating quality. The big, highly-colored specimen, well packed, is attractive and in many cases will sell more quickly and for more money than something better in quality but poor in appearance.

Attractiveness or beauty is the thing that first makes an impression on many

possible purchasers. Some people, especially the well-to-do of the city, buy things they see, not because they want them particularly, but because they "look so nice." This matter of attractiveness may seem a rather small thing, but it is one of the greatest essentials in the successful marketing of any kind of fruit. Its cost is nothing, and as it counts for so much in the most profitable marketing, it should be carefully studied in the packing of each of the various kinds of products and kept in force at all times by everyone who has produce to sell.

The Best Breed of Poultry

A Fair and Impartial Comparison of the Various Breeds of Barnyard Fowl

Condensed from E. M. Long's Article in Poultry Success, of Ohio.

MOST of the contributors who write along this line say "There is no best breed." I am not going to say that time-worn statement over again, because there are some breeds better than others for the purpose intended. Perhaps I should start out by saying that the Orpington is the best breed, but I shall not "toot my horn" too loudly about the Orpingtons. They are able to take care of their own reputation as all around general purpose fowls.

In the first place, what do you want them for? Eggs? Meat? Fancy? Do you want to set them or use an incubator? Do you want large size and slow maturity or small size and quick maturity? Do you want birds that are tame and docile or poultry that can fly like an eagle? Do you want them to stand around your back door and eat the crumbs or do you want them to range out a mile or so and feed off your neighbor's cornfield? These are the extremes.

If you want fowls to produce eggs, large white eggs, fowls that require lots of range to do their best, fowls that will range out far away from their quarters, fowls that grow and mature quickly, fowls that are always busy, nervous, wild, alert, naturally, fowls that will not weigh much when you sell them on the market, the answer is the Leghorns or, in a slightly subdued form, any of the Mediterranean breeds, such as the Minorca, Black Spanish, Buttercup, Ancona, Campine, etc. Few of this class of birds sit, and it is necessary to incubate the eggs in an artificial way.

Now, on the other hand and the other extreme, do you want birds that will weigh like turkeys, that develop slowly and attain great size, that are not the best of layers, that are long and fluffy in feathering, that are quiet and docile in temperament, that are good sitters if they don't break the eggs in the nest, and good mothers if they don't tramp the chicks? Then the answer is, the Asiatic family—the Cochin, the Brahma and the Langshan, etc.

Now, there are many good things that can be said about both extremes, and I am not here to say otherwise, because I admire every breed and variety of poultry extant. I can see beauty and usefulness in every variety even down to the little Bantam. The Leghorns have shown by test that they are the best all-the-year egg producers, and even the stately Langshans are not far behind with all their size and feathered legs and toes. The Cochin was once a good egg producer, so say some breeders, and Uncle I. K. Felch swears by the Brahma.

But there is a happy medium of varying size and tendencies—I refer to the English and American breeds. The Orpingtons are rather more massive than the American breeds, lower down and more heavily feathered; the Dorking is not so large, being long in body and full in breast; then there are other good English breeds and varieties that I will not mention. I know the Orpingtons to be wonderful winter layers, from experience. The Dorkings are said to be good layers and excellent for eating purposes, as are all chickens I have ever tasted. But the American breeds, the Wyandottes, Rocks and Reds being the most prominent, are a little smaller than the English class, a little longer on leg, especially the Rocks and Reds, and they come nearer to what we understand as a utility type. The English class as well as the American class is usually quite docile and contented, though it will range out well if given the opportunity. The American breeds probably mature a little more rapidly than the English. Now here are three classes and each have their varying degrees. There are enough shapes, sizes and colors that any man, no matter how exacting, ought to be suited. He can have red, white, blue, black, yellow, green, brown, with all their varying shades and combinations, and, believe me, their name is legion. He can have in size Bantams weighing less than a pound up to the Cochins, Brahmas and Orpingtons that weigh ten to fifteen pounds. He can have feathers for plumage, or silkies or frizzles. He can have long feathers, long downy fluff or short close feathering. He can have feathered legs or legs that are not feathered. He can have long legs like the Langshan or Game have, or he can have short legs like the Cochin have. He can have single combs or rose combs, small combs or large combs, pea combs or flower shaped combs or no comb at all as some Games have. He can have crests or no crests, he can have red earlobes or white earlobes, white skin or yellow skin, white legs, yellow legs or black legs, and in some cases blue and willow legs. Was there ever a family whose shape, color, size and markings were so diversified? Ought not any prospective poultryman find something among this collection that would please him? Yes, in every way.

Now, to be real serious, if you have a breed or variety that pleases you, stick to it. Don't change every year, but try and build up the variety you have. Aim high and keep on going. There is, right now, a great field for any man who will take any breed and work for excellence and egg production. The solution is pedigree breeding. Do you know the sire and dam of a certain bird? Most of us breeders know the sire, but not the dam. Pedigree breeding is going to win the day. The time is coming when breeders will have to give the parentage of the stock they are selling. It will pay them big money to be able to do so. The time is coming also when individual performance of the hen in the matter of laying is going to cut more figure than it does now.

A poultry scene in Vancouver Island, B.C. The White Leghorn seems to be the favorite.

FATE

I wrote a poem,
It seemed to *me* to read
All right;
I sent it to the magazines,
But *it* returned—
Last night.

—*Harry Meldrum Moore.*

A Despised Weed of Service

The Australian Salt Bush in the Western States is Being Used for Sheep Pasture

From the Technical World Magazine, by Richard Morrison.

THE Australian salt bush, or the Pendleton flood weed, as it is called in Eastern Oregon, is about to repudiate its bad reputation in the North-West. It may become a more valuable crop than alfalfa.

The weed is described as a many-branched perennial, which forms a thick mat over the ground a foot or more in depth, the branches extending from five to eight feet; one plant often covers an area of from fifteen to twenty square feet. The leaves are about an inch long, fleshy, and somewhat mealy on the outside. The fruit, tinged with red, is flattened and pulpy, but becomes dry as soon as it falls from the plant. The plant will grow on black alkali land that is of no value for anything else. It now grows along all the highways from Arizona to Washington, but few people know its name or, much less, its lately discovered value. In fact, it has been looked upon as such a pest in Eastern Oregon that a law has been passed in that State against allowing it to go to seed. Since the discovery of Y C. Mansfield, of Endicott, Washington, there will probably be no further legislation to prevent its propagation.

For several years Mansfield farmed three thousand acres of land, all of which was wheat land, with the exception of one hundred and fifty acres which was sub-irrigated alfalfa land. Finally the land became so foul with Russian thistles and Jim Hill mustard that this, together with the high cost of labor and the low price of wheat, made it impossible for him to continue much longer in the growing of wheat alone without also keeping livestock to help pay the living expenses. Therefore he invested in a flock of one thousand sheep. He drove them home through a district that was infested with salt bush and, on the way, he observed that his sheep were devouring the weed. Thereupon, he tried an experiment. He turned them into a pasture of five acres that was filled with the weed, and watched the results for two weeks. The animals fattened up rapidly and seemed to prefer the weed to any other food. Moreover, they did not clean up all the salt bush in the five acres during that time.

Last summer, Mansfield pastured his entire flock of one thousand sheep on salt bush with astonishing results. The sheep not only fattened remarkably, but their wool seemed to acquire a superior quality. Several neighboring farmers tried the same experiment on their sheep and found that their stock also flourished on the weed.

The great advantages of this discovery hardly need to be enumerated. The fact that salt bush grows on hard, firm soil—soil unfit for any other purpose—coupled with the fact that there are thousands of acres of such land in the United States, leds to speculation as to whether, if sown to this seed, this land would not keep enough sheep to produce more wool and mutton than is now raised in the entire United States. The discoverer believes that the weed will be found to be good feed for other stock as well as sheep. Hogs, cattle, and horses will eat it, and he believes they would take to it as the sheep do, if confined on it for a short time. Sheep have to be confined on it for a day or two before they relish it.

After the weed has once obtained a start, it requires practically no attention. In planting, the seeds have been found to germinate better if sown on the surface; when covered to any depth the seeds decay before germination. When the salt bush is used for hay, it should be cut while the branches are soft and tender, and the second crop will make considerable pasture, besides re-seeding the ground.

Spontaneous Fire in Hay

There are Many Cases on Record of Spontaneous Combustion of Clover and Alfalfa Hay

From a leading article in Wallace's Farmer.

WHILE some people scarcely believe it, there is no longer any question in the minds of men who have given the matter careful study, that stacks and barns filled with clover or alfalfa, and sometimes shredded fodder, take fire by spontaneous combustion. In the older countries, no one thinks of questioning this. The English farmer, or the Scotch or the Irish farmer does not dare put his hay into a large mow or bay, as we call it. He knows there is very great danger in that country of its taking fire by what is known as spontaneous combustion.

About twenty years ago there were probably a hundred barns in the State of Iowa which took fire in this way; and many others which were supposed to be set on fire by tramps who had pipes or cigars, in reality took fire from spontaneous combustion. At that time the scientific mind was incredulous. We remember consulting a scientist in the East on the subject, and he wrote us that it was utterly impossible; that the heat developed by large masses packed together would be so great that all fungous life would be destroyed, and there would be no possibility of fire from this cause. We sent him a chunk of charred hay from a barn that had taken fire in this way, and asked him what he thought of this. He replied: "There's no use arguing against facts." Nor is there any use in it now. Barns and sometimes stacks of clover and alfalfa hay do "cobust" spontaneously.

We have never yet seen any satisfactory explanation. We all know that oily rags and sometimes coal will take fire in this way. We have examined into the matter pretty carefully, and we know what happens before combustion actually takes place. When hay is put in a little too green, examination after a day or two will show that the whole surface is moist, as if wet by dew or a shower. The mass will steam and "smoke," as the farmers say. This moisture is the condensation of the vapor which arises from within. A closer examination will show that there are certain spots in the mow, which farmers call "craters," from which there is an upward current, which farmers have described to us as quite different in appearance from the air over the rest of the hay. One enterprising farmer in northern Iowa, in the year in which spontaneous combustion was most common, put an egg down in one of these craters, and found in a short time that the shell was entirely eaten off and the egg cooked and shrunken.

EXPERIMENT AT A COLLEGE.

There will be no spontaneous combustion until the moisture is entirely exhausted and the hay around these craters becomes as dry as if kiln-dried in a furnace. In the Pennsylvania Agricultural College, where some hay was under observation, what appeared like ashes was sifting down through the floor of the loft in which the hay had been put.

There may be spontaneous combustion without flame. One of our correspondents in Iowa had an octagonal barn. He put in one day's hauling of clover, dropping it in the center, making a conical pile. He concluded the hay was too green, waited a while, and then filled up the barn. The mass steamed for a while and then quit. No flame appeared, but when they came to feed the hay out, they found that this conical pile in the center was practically burnt. The structure of the stalks was apparently destroyed, and the fork would go down through it as through a pile of charred hay. This was spontaneous combustion without flame; and the only reason we can see for there being no flame is that in the position in which it was placed no air could reach it.

Two or three years ago, a farmer in Minnesota, while the family were eating dinner, looked out and saw the barn a mass of flame. The whole mass had apparently exploded. It was all he could do to get out his horses, which he had put in the basement of the barn just before he went in to dinner. There are some years in which spontaneous combustion is more or less common; other years in which it is rare; just why, nobody knows.

The important question for our farmers to consider is how to prevent it. There is but one way to do this, and that is not to put your hay in too green. There is another way of preventing it in case you have put it in too green. We followed this on one of our own farms with success. We had put in one day's hauling rather green. The next morning it was steaming, and the whole surface was covered with moisture. We simply put an old straw-

stack on top of the hay, and after that we were a little careful about putting it in too green.

WHEN IS HAY TOO GREEN?

The question arises: How are we to know when it is too green? That's a question we can't answer very definitely. In our own practice, we thought the hay was fit to go in when on taking a wisp of it and twisting it tight we could not see any moisture on the surface of the stalks. And yet hay may be too green when no moisture is visible. Much depends on the weather. You are not likely to get hay in too green by following this test, if there is a normal June or July atmosphere.

Sometimes the atmosphere is moisture-laden, however, and hay is not so dry as it looks to be. Again, sometimes when you have a north-west wind and a clear day and bright sunshine, what farmers call a "drying" day, hay is drier than it seems. If the farmer hauls in hay toward sundown on a muggy day, his hay is always greener than it seems. An experienced hand can tell by the feel of the hay and the weight of it, that it contains an unusual amount of water. In hauling in hay there are nearly always wet bunches. Throw them to the outside. Tramp your hay as evenly and thoroughly as possible, whether in the stack or in the mow.

It is not often that spontaneous combustion occurs in hay in bays or mows under twenty feet deep, nor in stacks; and yet a case occurred near Marshalltown, Iowa, some years ago, where a stack was seen to take fire by spontaneous combustion in daylight. It was a month after hay harvest. Horses were pasturing in the field where the stacks were. For some reason, they seemed fond of the hay in one stack, and ate into it all around—and that was the stack that took fire. It was probably the entrance of air to the center of the stack that caused the combustion.

It is quite possible to keep even clover hay that has been merely wilted, in a barn and in the best condition, provided the air is excluded. We have seen this done in one case in Madison County, Iowa, in a barn that had a solid floor. Its sides were ship-lapped; there were no windows—nothing but a ventilator on top. It was practically a silo. We have seen hay come out of that barn with the blossoms yet red; but we do not advise any farmer to put up hay in this condition in an ordinary barn. It would very likely take fire by combustion. The strange thing is that silage never takes fire, although it is put in with all the water in it, and water applied if the corn is too dry. The explanation is that the great heat generated by the silage kills all fungous life; but so does the heat kill at least the ordinary fungous life in the hay mow. A better explanation is that on account of the structure of the silo and the depth of the silage, it is not possible for the silage to become dry enough to take fire by spontaneous combustion.

THE ENGLISH PLAN.

The English plan for determining when there is danger is to take an iron rod and push it into the stack, leaving it there for a while. If on withdrawing it you can hold your hand on it, there is no danger. We used to do this on one of our farms.

We do not know whether the conditions will be such this year as to favor spontaneous combustion or not. We simply wish to warn our readers of the possible danger by telling them all that we know on the subject, and we have studied it with more or less care for the last twenty years. We are anxious to have some scientist give a really satisfactory explanation. The best we have seen is that of Professor Burrell, of the University of Illinois, made twenty years ago. After dealing with the theory that combustion arises from micro-organisms, and stating that "heat due to fermentation by living organisms is never sufficient to cause the ignition of vegetable matter, whether moist or thoroughly dry," he says:

"Let us see, however, what else occurs. As true fermentation progresses, water is consumed as well as the nutrient material in which the destructive process occurs. Along with the carbonic acid formed, there is separated a considerable amount of free hydrogen, the inflammable substance of common illuminating gas. If, now, the water supply becomes exhausted, the micro-organisms die, or at least their activity ceases and fermentation stops. If there is any further rise in temperature, it is not due to fermentation but to spontaneous oxygenation similar to that which occurs in cotton waste. Such oxygenation can only occur, as was before said, when the body is porous enough to admit the air, and rise of temperature can only occur, as was before said, when the generated heat is prevented from escaping. The greater the mass, the more favorable the condition for this last. The drier the mass, the more inflammable it is, and the more pronounced becomes its non-conducting quality in regard to heat. It may be said by some that little moisture, as in the case of coal, favors spontaneous combustion; but this is only true when by some chemical action the hydrogen of the water is liberated, a process not likely to occur in heated herbage."

Onions on Muck Soil

Some Facts about the Growing and Marketing of Michigan Onions

A Bulletin Review by the Editor.

THERE are many places in Canada where the growing of onions could be made much more profitable than it is at present. It has been held in some places that the growing of onions on black muck soil has not been attended with financial success. It will be of interest then to all intensive farmers to note the conclusions of the writer of the special bulletin from the Experiment Station at East Lansing, Michigan.

Although the onion requires a bountiful supply of moisture during the growing season, the general trouble on muck land is too much moisture, due to a poor drainage and the rainy season. These wet conditions during the late summer and fall stimulate the production of thick-necks or scallions and onions of a quality not suited for storage. Good drainage, therefore, is the first essential on muck land.

Not all muck lands are suitable for onion culture. Spring muck lands and shallow muck underlaid with sand or gravel are unsatisfactory. Often the value of the muck land for onions can be judged from the character of the ordinary growth upon it. Black ash, maple or elm indicates strong muck land; while muck that has only produced small brush or tamaracks is less desirable. The blacker or finer soil is the better.

Onions require a thorough preparation of the soil. It is usually advisable to grow corn or potatoes a year or two on this soil in order to get it in good shape and as free from weeds as possible. Fall plowing is generally preferred to spring plowing. The plant drag or float is generally used to level the field and to break up the clods. The use of a heavy roller is of much service. Onions are a very intensive crop, and require heavy fertilization for best yields. Barnyard manure well composted is ideal for onions. But it is unwise to apply coarse manure in the spring just before seeding, as it leaves the soil too open and coarse.

Chemical fertilizers are also extensively used, and a great deal depends upon the judicious selection of the required elements that are deficient in the soil. Muck lands are usually rich in nitrogen, and where recently cleared there is often a sufficient supply of this element for a few years. However, much of the nitrogen is found in an insoluble form, especially in early spring, before the soil becomes warm enough to allow chemical and bacterial action to take place. Nitrate of soda very quickly supplies this need. Sow at the rate of 150 pounds to the acre.

Considerable quantities of potash are needed by onions, and muck lands are generally deficient in this element. The application of muriate of potash at the rate of 300 to 600 pounds per acre is advisable.

Plenty of phosphates should be in the soils, and where considerable manure is used some phosphate fertilizer is required to produce the best crops. Acid phosphates and bone meal are sources of this element, and may be used at the rate of 500 to 1,000 pounds per acre. In a general way, it may be said that a good common fertilizer for muck lands should contain about 1½ to 2 per cent. of nitrogen, 8 per cent. of phosphoric acid, and 10 per cent. of potash. Unless the soil is distinctly acid, do not use lime, as it has a tendency on muck land to decrease production; but if the soil is acid, liming will correct this condition. Muck soils underlaid with soil or gravel are very liable to be acid.

HARVESTING THE CROP.

A crop that is allowed to thoroughly mature in the fall before harvest, makes the best storage crop. If left too long in the field during moist weather, a second

growth may start, which injures the quality and makes drying more difficult. Anything that tends to stimulate the growth of the plants during the late summer may cause trouble of thick-necks. In Michigan the crop is generally pulled by hand. From six to nine rows are stacked in a windrow. They are left in such a way that the tops partially shade the bulbs for a few days to partially cure, and are then forked into crates. These crates are left in the field for a short time, when they are taken to other places for topping.

In topping onions by hand, six to twelve plants are grasped at once and the tops cut off about one inch above the bulbs with a pair of sheep shears.

After the onions are topped they are stored in the curing shed, in open sheds or bins, for from three to six weeks. They should be thoroughly cured before placing them in the winter storage.

The next process after curing is sorting, and from the sorting rack they are bagged for shipment or packed in crates. Onions should be stored as soon as fully cured and before danger of severe freezing weather. Good ventilation is of primary importance in storage houses.

The Farms of Michigan

Some Facts About a Neighboring State's Agricultural Situation

A Bulletin Review by the Editor.

THE experiment station at East Lansing, Michigan, has made a review of agriculture in that State. Farmers in Canada will be interested in the status and possibilities of Michigan agriculture. Canadians as a rule know Michigan as a good mixed farming state, and also as a place where they grow corn, fruit, celery and peppermint. In the majority of cases the knowledge of this state is as vague to the average Canadian as is his general knowledge of outside conditions. A few facts taken from the special bulletin issued by Dean Shaw will give in a few words some facts and figures of interest.

Michigan is ranked sixth in the states of the Union in mineral production, while it takes second place in iron ore production. In 1911 it produced over 3,500,000 barrels of cement and 11,000,000 barrels of salt.

Only 51.5 percentage of her total land area is included in farms. Numerous good areas yet remain to be reclaimed. Her population is about 3,000,000. The area is equal to that of the combined areas of England and Wales, the approximate acreage being 36,787,000. It will be noted that Iowa State has about this same acreage, but differs from Michigan in that 95 per cent. of Iowa is in farms, with 86 per cent. in the improved class, while Michigan has 48.5 per cent. of her land area not yet included in farms.

The total value of land, implements, and machinery, animals, poultry and bees, according to the last census, was a little over $1,000,000,000. Of this, 56.5 per cent. represents land values, while 26 per cent. is building values.

There are about 207,000 farms, varying in size from 3 acres to 1,000 acres, with the average size of about 90 acres. Compared with this, it must be noted that the average size of the United States farms is 138 acres. Of the total number of farms owned in whole or in part by the operators in Michigan, 51 per cent. are free from mortgage. The balance are not seriously hampered by their mortgages. Reasonable indebtedness as a result of land acquirement, equipment, improvements, etc., is commendable, and stimulates generally the young man to increased efforts. Only 15 per cent. of the farms are operated by tenants.

In looking over the crops that are produced in this state, it will be noted that the cereal crops grade in about the following order of importance:—Corn, about $30,000,000 in value; oats, about $20,000,000; wheat, about $17,000,000; barley, about $1,500,000; and rye, $4,000,000 Considerable area is devoted to the growing of timothy and clover, alfalfa, millet and roots. A large acreage is also devoted to the production of sugar beets, it being reported that the sugar manufactured from a recent crop was worth about $11,000,000.

In the production of fruit Michigan ranks high. Her leaders are apples, peaches, and grapes.

In livestock this state carries about 1,500,000 head of cattle, about three-quarters of a million being dairy cows. Hogs, sheep and poultry are also large items in their livestock husbandry.

Michigan is notably a honey-producing state. In 1909 Michigan produced over 2,500,000 pounds of honey.

In transportation facilities Michigan enjoys sixth place in the total trackage, there being about 10,000 miles of steam railway. The electric railway mileage is increasing rapidly, while the fifty harbors on her lake shores enable a vast fleet of vessels to carry on traffic of extreme profit to the state.

Possibly no state in the Union is as extensively organized with rural co-operative agencies as is Michigan. In their Farmers' Institute Annual last year, the Farmers' Clubs had a membership of 7,000, the Granges 60,000, and the Michigan Gleaner Arbors 64,920. These societies extend their influences to the improvement of religious, social and business conditions. The extension service of the Agricultural College represented by the co-operative livestock breeders' associations, cow-test associations, Experiment Union, alfalfa clubs, and juvenile corn and vegetable-growing clubs is making rapid advances in rural organization.

This bulletin notes also that while the possibilities for farming in this state are very great, and while the governments, federal and state, have done considerable toward the improvement of agriculture, yet the migration to the land is not as great as one would expect.

It must be noted also that Canada is not contributing to the settlement of American farm lands to the same extent as was formerly the case.

The immense possibilities of every province of Canada are claiming the attention of native-born Canadians.

The Auto in the Country

Woman Tells About the Comforts that the Motor Car to the Country Home and Its Care

Condensed from an article by Leona D. Barnes in *Green's Fruitgrower.*

WITHOUT doubt, the auto is a boon to health, and "health is wealth," we hear it said. 'Who does not appreciate those short drives on a sultry summer's day, "Just to cool off," as we say, and no horse-flesh is made weary by our comfortableness.

The farmer who previously was tied at home by so many chores can spend many a pleasant day away from home; see friends oftener than otherwise; go far and get back in time to do the evening chores, and, oh, with what vim we can go at them!

Women get away from home more. We get town social advantages to a greater extent, or, taken all in all, we farmers are care-free since the advent of the automobile, and that means that life runs more smoothly with this added spice to our work which was heretofore drudgery and a monotonous life.

With our rural mail carriers distributing mail with autos, we farmers all get our dailies, etc., in time to enjoy them at the noon hour. Our roads are good, which is a great advantage to the new mode of travel.

The fruit-grower, dairyman and poultryman get their perishable products to consumers more rapidly with the auto, to the profit of all. The auto convenience enables the farmer to get machinery repaired sooner, with less time from his work, and hired help is kept busier by it. The automobile is a quick method of transferring children from their homes to the union school, miles away, and undoubtedly will soon be more generally appreciated as such a conveyance.

The greatest disadvantage of the automobile is that we all cannot afford them. It means a life of saving to many even though they reward us with so much pleasure, profit and convenience. Even then few can use them during the winter.

Bad roads are against them and discourage the would-be motorist. Few are deceived as to the ability and represented amount of service a newly purchased car can give. We should know the car we buy. Take it all apart, figuratively speaking, and see for yourself how strong it is made. Every car has a special good feature that might be misleading, but the buyer must know their weak points also. Your engine should have enough strength to climb a hill without stopping "to get up steam" before making the ascent.

Machinery will wear out, and we must

buy the auto machine that will fill our particular needs and judge the cost price of same accordingly. If you mean to run a car hard, then get one you know will stand the test.

Another disadvantage to the majority of automobiles is there are so many obstacles in the way of a woman driving them, and a woman on the farm wishes to go many times when it is impossible for the farmer to leave his work and drive for her. Many women are competent to drive a car, but too much strength is required for most of them to crank a car and attend to tire troubles. A good self-starting device is to be recommended; also a compressed air tank to inflate the tire, or, in other words, you and your wife should buy a partnership car.

It seems to me, a roadster, tourist and truck combination car would meet the average farmer's need more admirably than the present styles. Very few farmers can afford both a motor truck and touring car, and we hesitate using our nice touring car for both purposes.

Motor power on the farm is just in its infancy, but for heavy work and long hauls it is being appreciated as a saving to the draft team.

The mechanical expense is not so great as the tire question, especially if you do your own repair work. Improper inflation causes many tire troubles, and a pressure gauge is necessary in the tool outfit. Another big item is that of overloading a car. A machine of given weight is equipped with tires to correspond, so, if you expect to continually overload your machine, buy larger tires. There are tires guaranteed not to rim-cut which would be economy, but a careful purchase will add greatly to the satisfaction given. The non-skid are certainly convenient at times and should add to the life of the tire. Speeding over rough roads is a tire's worst enemy. We should examine tires for cuts and bruises, and keep them patched up well, and so get greater mileage from them. Tires should get special care in winter; removed from rims, cleaned and stored properly. But in any case, whenever the car is allowed to stand any length of time, it should be jacked up, leaving but little pressure in the tires. Many rules might be put down for the care of the automobile proper. Cleanliness is its best friend, and to know how to clean it properly is worth while investigating. Keep your eyes open at the garage and see how and when it is done.

Stop a car carefully. A car should go around corners slowly and should always be slowed up gradually and never brought to a standstill within its own length, unless circumstances positively require it. Taken all in all, this modern utility vehicle will, and is, finding its place on up-to-date farms.

The Miracle of the X-Rays

One Man Stumbled on to Its Discovery and His Find Trained Another Servant for Humanity

By DR. GORDON BATES

The advance of science has been no more appreciated by the people generally, than in its service to suffering humanity. Medical men have used the X-Rays as an agent for the prompt relief of bodily distress. It has been one of the greatest aids to surgery and medicine. This article is written by a leading physician of Toronto.

As even the least among us know, X denotes the mysterious, the unfathomable, the occult. Sometimes, in the teeth of an examiner it stands for the essence of maliciousness. More frequently there is a certain benevolent aspect to the unknown; none of which is altogether irrelevant in the discussion of the rays whose character made them deserve their name.

The X-rays were called by their expressive title because it was the only title which fitted them. Now they are sometimes called the Rontgen rays. Then, their discoverer knew that he had found something new and astounding, something possessing unheard of, almost magical qualities. As to its meaning or explanation—well the less said the better. Obviously X was discovered but it was only X. The other side of the equation was yet to be filled in.

History has it—for in the story of X-rays it is ancient history now—that one day in the fall of 1893, Prof. Rontgen was experimenting with Crooks tubes. One should explain that these are large glass vacuum tubes so arranged that electric sparks from a high voltage current can be passed through them. At the time, on a flat-topped desk in his office lay an unassorted heap of books, glass tubes and plate-holders, platinum and aluminum electrodes and what not; such an unassorted heap as is likely to accumulate on the desk of a busy man. In this confusion it happened that a large book which the professor had been reading lay on a photographic plate-holder. In the book lay a key serving as a book-mark. Over this, during one morning, the experiments went on.

Plate 4—An X-Ray photograph of the lungs.

Returning from lunch, Prof. Rontgen who was an enthusiastic amateur photographer, took out the plate-holder from beneath the book and went out with his camera to take a picture. Unfortunately for the picture, but fortunately for modern science, the portrait or whatever it was which resulted was ruined by the appearance, in the center of the developed picture, of a large black key.

The professor was puzzled but later set to work to repeat precisely the operation of the day on which the occurrence had taken place. The Crooks tube, book, key, and plate-holder were placed in exactly the same positions and lo, again a key appeared in the photographic plate.

Here, indeed, was a strange thing. Of course it was known that cathode rays would affect a photographic plate, but here between the plate and the source of the rays were a thick book and the hard rubber side of the plate-holder, both of which were impervious to light. The greenish glow or fluorescence in the Crooks tube then suggested that substances other than glass might be made to fluoresce. Various ones were tried. One of them was barium platino-cyanide. This, placed on a card-board screen, glowed brilliantly under the influence of the new rays. Solid substances placed between the source of the rays and the fluorescent screen showed up distinctly on the far side of the screen. In 1895 Prof. Rontgen made public the facts he had discovered.

Plate 1—Showing a fracture of both bones of the leg.

The explanation of the rays, as far as it goes is this; that when cathode rays passing through a vacuum tube impinge against the glass wall of the tube itself, certain rays (the X-rays) are produced. By using special cathodes it was soon found possible to focus the cathode rays on metal targets or anti-cathodes and thus strengthen them. Since the heavier metals have proved to be more efficient for this purpose they were—and are—more frequently used. Platinum is the material in the best tubes.

So much for the discovery and its explanation. Of course it aroused a sensation. Everyone could appreciate the existence of the thin light in the air, which made it possible for one to see. Here, however, was something which made the impossible possible, which permitted one to see through solid substances, books, cushions or thick boards, to obtain actual photographs of things on the other side.

DISCOVERY APPLIED TO SCIENCE.

In medicine and surgery the value of it all became apparent at once. Obviously the hit-and-miss method which had been part of the diagnosis of various conditions, notably fractures, could be largely done away with. Before the use of the new rays, broken bones were set and their subsequent position, good or bad, ascertained largely by sets of measurements. In many bad fractures this, to put it baldly, meant little better than scientific guesswork. Often the condition was partially or incorrectly diagnosed in the first place. Even if the diagnosis were correct, the sequel, because the surgeon could not check the results of his treatment, might be too frequently a life-long deformity for the unhappy patient. To-day in any case in which there is any possibility of an error the existence of Rontgen rays provides a means which no surgeon can afford to neglect. In them lies a sure means to correct the fallibility which is becoming less and less a part of surgical diagnosis.

Plate 1 gives a very easily interpreted picture of a fracture of both bones of the leg. Such a fracture could probably have been easily set without the aid of the X-rays. It is a clear and clean cut; yet one may easily imagine the possibility of a fracture not so simple, one in which for instance fragments have been detached as in an oblique fracture whose parts would insist on over-riding. The possibility of such complications is one which can not be disregarded even in a fracture which seems simple.

The value of the X-rays in clearing up such obscure cases or in rendering assurance doubly sure in simple ones has been inestimable. No less valuable have they been in cases when the detection of foreign bodies has been necessary.

Man is at best a fragile creature and, as he is liable to breaks of one sort or another, so he may ingest articles of diet which are indigestible indeed. Men, insane and otherwise, and children have emulated the ostrich in swallowing all sorts of articles from tacks to safety razors. Bullets, pins, coins, crochet needles and other things too numerous to mention have found their way by one avenue or another into the interior of man's anatomy. Once, they might be discovered by a groping surgeon. Too often they disappeared completely only to turn up later as the cause of peritonitis or some other malady which might easily be serious enough to result in death.

Plate 3.

To-day, by means of the X-rays in the hands of a competent operator a foreign body may not only be located but actually seen. Plate II. gives an example of this. Some unfortunate has stepped on a needle. The tough skin of the heel almost precludes any possibility of locating it by ordinary means. Before the days of the X-rays one would have found it necessary to simply cut and cut until, largely by chance, the needle was struck. Possibly —or probably—it was not found at all. The modern simplifying of the problem is made obvious by the picture.

To experienced surgeons one of the greatest revolutions made possible has been brought about in kidney surgery. In looking over papers on this subject of even little more than ten years ago, the errors in diagnosis made by even the most distinguished surgeons are, in the light of present achievements, almost laughable.

X-rays have changed all this. At first, even shortly after their invention, they proved to be of value in locating stones in the kidney or in the ureter, the tube draining the kidney (the small oblong shadow shown in Plate III. is an example); but since other things such as phleboliths also cast shadows, the method was not always trustworthy. Of late the use of the cystoscope and the ureteral catheter (a long fine tube which may be insinuated into the ureter), in combination with X-rays have added greatly to the utility of the latter. Not infrequently small pea-like stones or calculi as they are called, are found whose existence formerly could only have been a matter of conjecture.

PRODUCING PICTURES.

Any substance whose density is in great contrast to its surroundings will cast a shadow on an X-ray plate. Carbonate of bismuth is an example. It is a heavy white powder and has been used to demonstrate various conditions especially in the abdomen. If a patient is given a drink of this substance suspended in water, the thick cream-like concoction passes to the stomach and thence to the intestines. In passing it coats the walls between which it passes with layers of bismuth sufficient to cast a distinct shadow on a plate. Thus a picture of the stomach and intestines may be produced and possibly some diseased condition demonstrated. Again by swallowing little pellets of bismuth the situation of strictures of the oesophagus may be found. The package of bismuth goes down until its passage is interrupted. The X-rays show how far it has gone. A point just below this must be the situation of the stricture.

Similarly certain conditions of the heart blood-vessels or lungs may frequently be shown up when ordinary methods of diagnisis are insufficient. An outstanding example of this is found in aortic aneurysm, a dangerous dilatation of the great artery leading from the heart. It commonly shows up well on a fluoroscopic screen or an X-ray plate.

Other heart and lung conditions can be fairly pictured too. Plate IV. is a picture of the chest of a person suffering from tuberculosis. One lung is affected as will be seen by the shadows on the right side. The other lung is clear. The position of the dark shadow in the center of the picture.

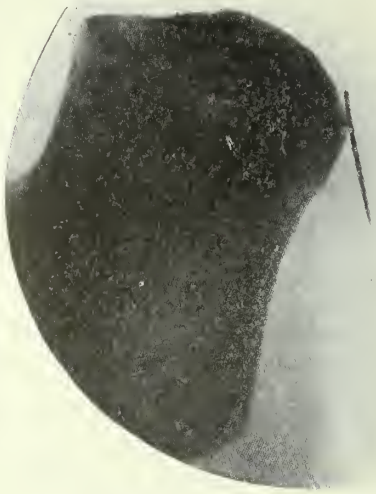


Plate 2—Showing a needle lodged in the foot.

Such are a few of the methods by which the diagnosis of many conditions is furthered by the use of these curious rays. One has only to look over a series of plates from the collection of an expert radiologist to realize how valuable they must be. Here will be several plates of bullets implanted in obscure portions of the body. Next perhaps will be a picture showing the chest of a child who has been unfortunate enough to get a stick-pin in his wind-pipe or a cent painfully crammed into his oesophagus. Next will be a badly broken leg or a dilated stomach or a tuberculous bone. One cannot but feel elation at a retrospect which includes successful repairs of all sorts which only these pictures have made possible.

Early in the study of X-rays it was found that improperly used they might do a great deal of harm to people using them. Before this was realized more operators than one suffered the penalty which the inexperience of pioneers in many ventures makes frequent. Severe burns were not uncommon. Terrible skin inflammation, too, resulted, so severe in the case of at least one well-known English physician that both his hands were subsequently amputated. Following this, perhaps on the principle that one poison will destroy another, it was suggested that possibly X-rays would cure disease and in fact their effect was tried in many conditions.

In some cases results more than justified expectations. In others woeful disappointment followed. In superficial cancer such as early cancer of the lip, in that malignant condition known as rodent ulcer, a terrible face cancer, and in lupus or tuberculosis of the skin, brilliant results in the form of absolute tumors and in tuberculosis of the lungs results have been entirely negative. In not a few chronic skin diseases the X-rays have a decided value.

But one might continue a dissertation on the merits and possibilities of so interesting a subject ad infinitum. Space forbids that one do more than touch on a few of its more important uses as a diagnostic and therapeutic agent.

It may be of interest, last of all, to say something of the appearance of the tube which generates rays. It is a large glass bulb with several hollow projections. The air has been exhausted and the wires which bear the electric current to and from it are attached at either end. Projecting into the center from one end is the cathode, opposite it is a small metal plate known as the target. It is from this that the X-rays are reflected.

In operation the tube is filled with a greenish phosphorescent light. One is apt to jump to the conclusion that this constitutes the mysterious rays. X-rays are invisible, however, and to even see their results one must use a fluorescent screen, i.e., a screen which the rays will cause to glow or fluoresce.

Go into a dark room where an X-ray tube is in use and hold your hand between yourself and the tube, and you will see—nothing. Hold between yourself and your hand a screen coated with, for instance, barium platino-cyanide and the picture appears. Immediately the screen glows with a curious greenish light. In its center you see your hand; not your hand perhaps, but its ghost, its skeleton. Every bone is there in finest detail. The ring on the other side of the screen cast shadows so distinct that you think you see through the solid cardboard; and to all intents and purpose you do.

Such are the outward and visible signs of a wonderful discovery. The deeper and somewhat controversial questions of the exact constitution of the rays and the discussion of the relation of their wavelength to that of light may be properly left out of so brief an article. The idea has been merely to depict something of their utility. Anyone who has any conception of the assistance they have rendered to physician and patient the world over must realize that this is great indeed.

Building Up the Infant Character

By DR. ORISON SWETT MARDEN

"I AM so full of happiness," said a child, that I could not be any happier unless I could grow."

It was N. P. Willis who added to the beatitudes, "Blessed are the joy-makers"; and if all parents understood that the child's mission is to keep joy alive in the world, children universally would be the object of our greatest tenderness and reverence.

Alas! how few parents are awake to their sacred trust! Until recently children were looked upon as chattels. They were brought up with the idea that they had no special individuality, and precious few rights which "grown-ups" felt bound to respect. A generation ago, even, they were often flogged and cruelly treated.

Many fathers seem to think that their career is the great thing in their lives, but really the most serious business they are ever given to do is the training of their children. The state is beginning to discover that children are a tremendous asset which it can not afford to allow to run to waste through neglect, bad rearing, or bad training on the part of parents or teachers; that the vast sum spent in our criminal trials and in maintaining penitentiaries, institutions for defectives and reformatories, would be largely done away with, if children were properly trained and educated. Even from a monetary standpoint, the making of useful citizens would mean untold increase of wealth, by rendering productive what are not only non-productive, but also enormously expensive encumbrances. This new emphasis on the civic value of childhood calls for improved methods in child-rearing.

Only the happiest children can make the happiest and most useful citizens. Play is to the child what sunshine is to the plant. Children cannot have too much heart sunshine, too much love. They thrive on play and fun. It is their normal food, and the home is the place above all others where they should get an abundance of it.

Most homes are far too serious. Why not let the children play and frolic to their heart's content? They will get rubs enough, hard knocks out in the world; they will get enough of the seamy side of life. Let them at least be *just as happy as parents can make them* while at home, so that however unfortunate their later experiences, they can look back upon their home as the happiest spot on earth.

If children are allowed to give vent to all that is joyous and happy and spontaneous in their natures, they will be infinitely more likely to blossom out into helpful men and women, instead of sedate, suppressed, sad-faced individuals. Children who are encouraged in self-expression through their play instinct will not only make much more normal human beings, but will make better business men, better professional men, better citizens, better men and women generally. They will succeed better and have a nobler influence in the world. Joy and fun are great developers, calling out our richest resources, educating our fuller powers.

Unattractive, cheerless homes, and harsh, unsympathetic parents, are responsible for a large part of the misery, the unhappiness, wretchedness and crime of the world, and the frightful conditions of the submerged class.

There is many a poor wretch in the failure army to-day who can trace his failure and disappointment to early discouragement. If a father wants to get the most out of his child, he can not do it by cramping him, by watching him all the time, or by criticizing him. Children become so discouraged by being constantly denounced, scolded, and perpetually reminded of their shortcomings, that they lose confidence completely in themselves, and even their self-respect.

A poor boy who had been taken from the slums to a boys' farm home, and who had been told all his life that he was good-for-nothing, said to the other boys: "I dunno nothin' and I allus did. My parents allus tole me I wuz nobody and never would be."

These denunciations so discourage a boy after a while that he does not care, and does not try to do his best. Then, of course, his standards drop and he deteriorates.

Many a parent talks to his boy in this fashion: "Now hurry up, you young good-for-nothing. What makes you so slow and stupid? Why don't you get a move on? You'll never amount to anything, anyway."

It is a dangerous thing to destroy a child's self-faith. It is fatal to make him think that he can never make anything of himself.

Parents do not realize how easy it is to imprint indelibly upon the plastic, impressionable mind of a child a picture

that will curse his whole life. How often mothers and fathers tell visitors what a "little terror," what a "good-for-nothing," or a "bad boy" John is. They little think that this curse brand can never be entirely erased from a child's mind. Cruel, cutting remarks are like initials carved in the green young sapling, which deepen and widen with age.

Children are very easily discouraged; their progress is to a great extent dependent upon praise. Approbation is the strongest possible motive with them. They will do anything for a parent or teacher who believes in them, encourages them, and tries to help them; but disparagement disheartens them and they succumb under continual nagging and scolding. Their little sky is easily clouded.

If a child has great weaknesses or grave faults, he should not be constantly reminded of them. Parents or teachers should see the ideal side—the best things in the children, and dwell on these. People, young or old, can best be reached by appealing to the divine in them; but human nature rebels against antagonism, denunciation, criticism, and scolding.

If one has a particularly dull child or a stupid pupil, he should not be continually reminding him of his deficiencies. Older people should not forget that many of our greatest men and women were, in the estimation of those about them, very slow, stupid children.

One should hesitate to condemn a child who is slow in developing, and even apparently dull and indolent. He may simply be struggling to find himself. The wise parent or teacher will help him to self-discovery; feel for him in his difficulties, for they are very real to him, and he may be suffering intensely when an unsympathetic person would think him merely lazy. He may be growing so fast that all his energies are exhausted in the growing processes.

Instead of constantly calling a boy's attention to what he lacks, to his unfortunate traits, teachers should encourage him by telling him that he was not made for failure, but for success and happiness; that he was made to hold up his head in the world, not to go around sneaking and apologizing, doubting his ability. He should be told what he can do, not what he can't. Parents should substitute assurance for timidity, replace doubt with confidence, and they will soon find that they have a new boy, with a new purpose, new determination. When they have planted hope instead of discouragement, confidence in the place of doubt, courage in the place of timidity, they will have won a great victory in a boy's life.

Many parents and teachers know how boys will work like troopers under encouragement and praise. There must be no obstruction, no ill-feeling between the teacher and the pupil, if the best results are to be obtained. Pupils will do anything for a teacher who is always kind and considerate, and shows an interest in them, but a cross, fractious, nagging one so arouses their antagonism that he often proves a fatal bar to their progress.

Not long ago a boy asked his mother this question: "Mother, haven't I been a good boy to-day?"

"Yes, my son, a very good boy. Why do you ask me?"

"Oh, because you told father how bad I was the other day, and I thought it only fair that you should tell him how good I have been to-day."

It is all too easy to condemn what is wrong in a child and take it for granted that the good will take care of itself and needs no comment.

A certain mother had reared her children entirely upon this plan of praise. She never lets an opportunity go by for commending them for doing well, for appreciating their efforts to do right. This she says, has infinitely more influence with them than perpetual scolding.

"Don'ts" injure more children, dwarf and discourage more children than almost anything else. Through the use of harsh methods, highly organized, sensitive children have often been ruined by those who do not understand the child nature and who scold and nag and bully children into obedience. Children treated thus invariably become sullen, obstinate, irresponsive.

Very few teachers or parents know how to bring out the best in a delicate, shrinking child. Such a child, so often extremely nervous and high strung, is usually misunderstood by every member of the family, even by the mother.

There are parents, and especially mothers, who make a point of correcting children in public places or before others, because they think that the humiliation will teach them a lesson. Nobody who has not suffered the agony of such experiences can realize the terrible sense of mortification, the embarrassment, the distress, such treatment costs a sensitive child. Children suffer for days after being held up to public ridicule and shame.

A teacher once punished a small boy by making him sit in her lap before the whole school. Of course, all the pupils laughed at him. He was terribly mortified and did not get over the disgrace for months. It was a long time before he could look the other boys and girls in the face.

The fact is that most parents and teachers do not realize the difficulties of child life. Children are easily disappointed, they are easily crushed under denunciation, because they have not developed a life philosophy sufficient to fall back upon when things look dark. When they are discouraged they are completely disheartened, because they have not had the experience which comes from many disappointments born of contact with the world.

It is perfectly possible, through the power of suggestion, to develop in children faculties upon which health, success, and happiness depend. Most of us know how dependent our efficiency is upon our moods, our courage, our hope. If the cheerful faculties were brought out and largely developed in childhood, it would change our whole outlook upon life and we would not drag through years of half-heartedness, discouragement and mental anguish, our steps dogged by fear, apprehension, anxiety and disappointment.

Every kind, sympathetic mother, whether she realizes it or not, is constantly using the power of suggestion in rearing her children, in healing all their little hurts. She kisses the bumps and bruises and tells the child all is well again, and he is not only comforted but really believes that the kiss has magic to cure the injury. The mother is constantly antidoting and neutralizing the child's little troubles and discords by giving him the opposite thought.

The parent who wants his child to be brave and strong, should hold the brave thought. What is suggested to others tends to develop corresponding qualities in them. He should think of the child as brave, courageous, strong, and self-reliant. Everybody knows how lives are molded by the pictures which are presented to the mind during the plastic years when everything makes such a vivid impression. Suggestions born of anger, criticism, or animal suggestions can never call out the godlike in a child.

Fifty years ago a boy's attention was kept upon the wrong state of things, upon the bad, upon the evil, a large part of the time. The minister was always preaching about the terrible things that would happen to people who did wrong; was constantly commenting upon the depravity of the race and the fall of man. Now the tendency is the other way. People hear a great deal more in the pulpit about the good, and less about the bad. They do not hear so much about the result of their awful mistakes; the good is magnified, the evil seldom emphasized.

The parent's mind is like a magnet, which attracts the qualities in the child similar to those which are projected into the child's mind. If the good thought, the cheerful, sympathetic, charitable, magnanimous thought, the industrious thought, the honest thought, can be held long enough and constantly enough in a child's mind, he is almost sure to grow up into a normal, successful man.

The child's self-confidence should be buttressed in every possible way; not but that he should be taught to overestimate his ability and his possibilities, but the idea that he is God's child, that he is heir to the infinite inheritance, magnificent possibilities, should be instilled into the very marrow of his being.

If parents would appeal always to the divine natures in their children, if they would think of them as the divine beings God intended them to be, instead of the burlesque creatures which our low and unworthy thought brings out, they could develop the sublime, the beautiful side of youth.

It is wonderful what a powerful influence the little courage plays, and the justice plays, the social plays, and the courtesy plays in the kindergartens have. Children in the slums who are brought up in homes of darkness and squalor and wretchedness, and who never get a glimpse of better things, go home from the kindergarten, after they have been practising the social plays, the good-manners play, and carry into their homes new ideals. They become polite and gentle. They salute everybody courteously. And

their parents say that, in many cases, they entirely revolutionize their homes by their kindergarten ideals.

The greatest thing in the rearing and education of a child is to develop his natural, normal, joyous self-expression. Yet how seldom are boys and girls trained perfectly along natural lines, so that there is no repression, restraint or cramping of faculties, and self-expression is free, natural, untrammeled. Perhaps the majority of children are warped and twisted by being forced to do things instead of being led by motives that will make them anxious to do them.

When a child does not show enthusiasm in his study, in his work, there is something wrong, for enthusiasm and bubbling buoyancy are as natural to child life as song to the bird. You must free from drudgery a child's study or work if you would have him get the most out of it.

President Eliot says: "The aim in modern education is joy and gladness in achievement. I need not say that freedom is necessary to this joy. Schools used to set children doing things they could not do well. That is the unpardonable sin in educational administration. It is not for the happiness of the children only that this new motive—to increase joy—has come to bless us. It brings new happiness to the teacher also. It is a means of happiness for everybody throughout life. As a result of the advent of this new policy we are learning not to use with children a motive that will not work when the children are grown up. To be sure, we must admit that this doctrine condemns almost all the school discipline of the past, and much of the family discipline; but the future will not mind that, if it finds the new doctrine beneficent."

Already the world is learning that it cannot force power out of any human being, that compulsion brings out the worst, attraction calls forth the best. The great achievements of the world have been spontaneous; they have been joy achievements even in the barest poverty.

The Farm Bride at Work

Continued from Page 38.

penses and they leave quite a surplus. Just now I am saving that to build a hired man's cottage. When we don't board the men I will have time to work at the landscape gardening we've been planning ever since we bought the place, so the dairy returns go back into the farm assets after ail."

THE JOY OF BREAD-MAKING.

On Friday morning I found Huldy making bread. I knew this was her sweeping day and although it isn't very hard to sweep house where you can take all the rugs outdoors and have no unnecessary furniture to move, still I didn't see how she could get through with everything without some of the rushing she disliked so much. Anyway, I wondered why she should do a baking of bread every week with stores so convenient.

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"I don't know why—somehow it seems worth while," she said. "Bread-making is one of my few accomplishments. I can't embroider or sketch, but I like to make bread. I do it the easiest way, I think, just one kneading and it's all done before nine o'clock. Do you think it's foolish?"

I didn't think it was foolish. If women could take a little of their pride in accomplishments that don't count, like winning the prize at a bridge club and turn it over to their profession of home-keeping they would find a lot more pleasure in it. Incidentally their families might, too.

Instead of the display of cakes and pies and tarts generally turned out to cool on the bake rack on Saturday, Huldy got things ready for a warm digestible dinner and a light, wholesome supper for Sunday. "There are hundreds of scalloped dishes to be made from materials on hand in every farm cellar," she said. "The sauce can be made on Saturday morning and the material prepared for mixing. It requires only a few minutes to prepare some jellied meats with the Saturday morning fire. If you have a dressing ready it takes almost no time to compound a salad."

And what is just as important, she wasn't tired out on Saturday evening. Some young people came in to get her to play a piece they wanted to sing at church in the morning, and as I listened I wondered more and more how one would estimate the salary of a woman manager and carry out, and fit in like she did, or what the secret could be, if there was a secret at all. I think I discovered it a few minutes afterwards.

When the folks had gone I asked her when she had found time to learn to play.

"About two years ago—as soon as I knew I was coming here," she said, "I knew how much it would be worth to me to play even a little. I had always thought I hadn't time for it before, but now I had to have it whatever it cost because—because I did want to make things go here. I have been interested in my other positions, but nothing seemed to matter so much before. And it is going to go, isn't it?" Her eyes were bright, serious almost challenging in their eagerness.

I looked toward the door where James was waiting for her to talk over something about renting an orchard—something she didn't know the first thing about, but he seemed to have no end of confidence in her judgment and she's learning.

"It looks like it," I said.

MILK AND CHEESE FROM THE SOYA BEAN.

The production of synthetic milk from the soya bean appears to have fully entered upon the commercial stage. Several factories in Asia and continental Europe are now turning out this product, and a large concern known as the "Synthetic Milk Syndicate, Ltd.," is about to establish a factory in Liverpool, at which soya milk will be made according to the

process of Dr. Fritz Gossel, of Essen, Germany.

In order to produce 100 litres of milk by this process, ten kilos of finely ground soya beans (or any of several other vegetable seeds, such as earth nuts, pistachio nuts, or sesame, which have recently been found to be suitable for use instead of beans) are mixed with 100 litres of water and about five grains of phosphate of soda or potash, allowed to stand for an hour, and then slowly brought to the boiling point. The liquid is then filtered, and the residue is pressed. To the resulting liquor are added small quantities of milk sugar, or other carbohydrates, sodium chloride, and carbonate of soda, and about two kilos of sesame oil or other suitable mixture of fats or oils. Enough pure water is added to bring the total quantity up to 100 litres. It is expected that this "milk" will be retailed in England at four cents a quart. It is claimed to have the same nutritive value as natural milk, and to be free from the characteristic oily flavor which makes other soya bean products unpalatable to most people who have not acquired the tastes of the Orient. In Indo-China, where the soya milk industry has assumed large proportions, three principal kinds of cheese are made: a fermented variety with a taste suggesting Roquefort; a white salted variety, resembling goat's milk cheese; and a cooked or smoked variety, like Gruyere.

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Lower prices for the city consumer, because produce can be delivered at less cost for haulage.

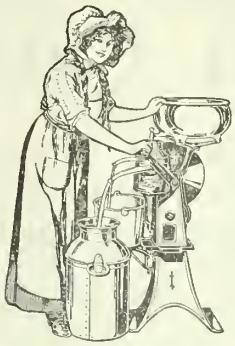
More traffic for the railways, since roads act as feeders of the main lines of travel.

Free delivery of parcels and mail to farmers' homes.

Better school attendance.

The promotion of social intercourse among the dwellers of rural districts.

Country homes in summer for city people and increased automobile tourist traffic, thus creating more local demand for eggs, dairy and garden produce.



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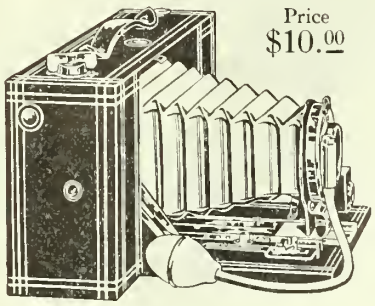

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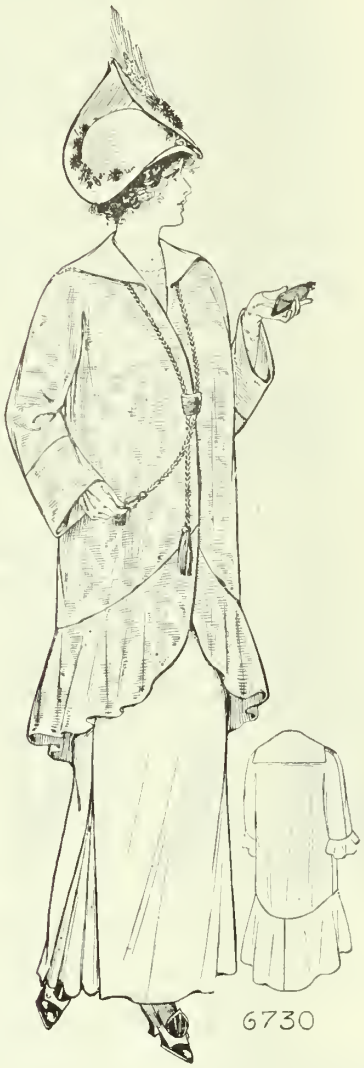

No. 6730—LADY'S COAT.

This coat in the new style has body and sleeves in one and is trimmed at the bottom with a circular flounce of graduated depth. At the neck is a wide collar, tapering to a narrower width in front and leaving the neck a little open. The sleeves are full length. Moire, satin, taffetas, and many novelty woolen materials are used for these wraps.

The coat pattern, No. 6730, is cut in sizes 34 to 44 inches, bust measure. Medium size requires 3⅞ yards of 36- or 40-inch material.

This pattern can be obtained by sending 15 cents to the office of this paper.

No. 6723—LADY'S SUIT.

A model coat suit for such materials as gabardine, serge and the like is here shown. The short jacket dips in the back and there is a tuck dart at each shoulder. Sleeves are in regulation effect, and at the open neck is a collar. The skirt has three gores and is slightly raised at the waist-line. It closes in front and has a patch pocket at one side.

The suit pattern, No. 6723, is cut in sizes 34 to 44 inches, bust measure. Medium size requires 4 yards of 44-inch material, ⅜ yard of 27-inch figured silk for collar and cuffs, and ½ yard of 27-inch plain silk for revers.

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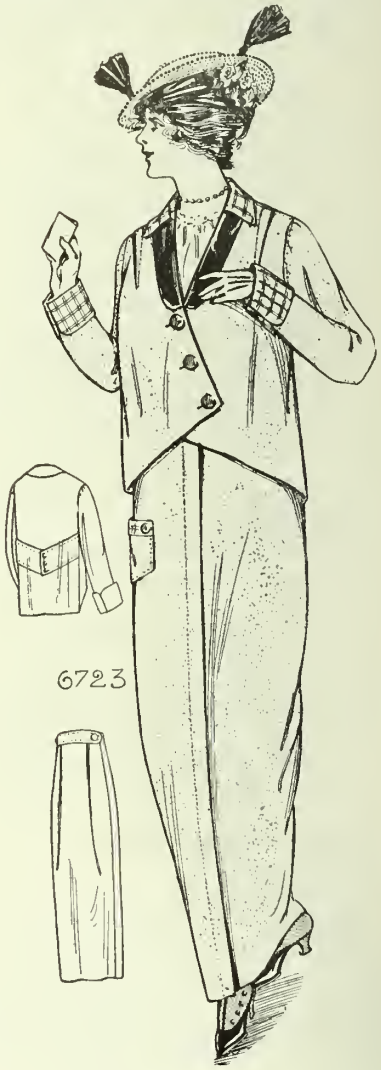

No. 5717—LADY'S WAIST.

This pretty bodice is cut with body and sleeves in one piece; if wide material is used there need be no seam in the back, but otherwise a seam must be made. The closing is in surplice effect and there is a handsome roll or standing collar at the neck. The mode is good for crepe de chine, cotton voile, plain and embroidered crepe and similar materials.

The waist pattern, No. 6717, is cut in sizes 34 to 44 inches bust measure. Medium size requires, without seam at back, 1¾ yards of 36-inch material; with seam, 2¼ yards the same width.

This pattern can be obtained by sending 15 cents to the office of this paper.

NO. 6721.—MEN'S NEGLIGEE SHIRT.

This shirt can be made in two ways, either with the full length coat opening, or with the shorter opening, and also with a standing, turnover collar of regulation style, or with a wide roll collar of more ornamental effect. The sleeve is set-in at the armhole, and there is a small yoke across the back. A cuff finishes the wrist.

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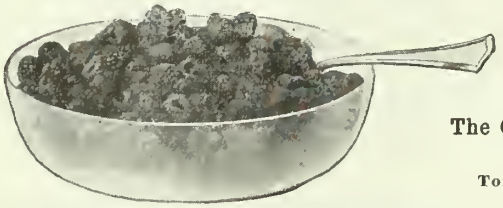

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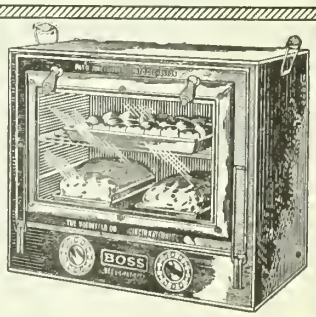

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What Shall We Take to Our Picnic?

By S. B. MIDDLEBROOK

THE warm days of summer have come again and Nature's big outdoors call us. How we delight at this season to get away from Mr. Toil and to go picnicking or camping in some cool and shady spot.

In making ready the luncheon to take with us, a great deal depends upon whether we can rent dishes or have a convenient way of carrying them. Fitted up picnic cases containing complete service for four people can be procured, but many do not care to go to this expense. Another simple and inexpensive case I have seen is one containing a sandwich box and an insulated bottle. Paper plates and sanitary paper cups do away with much of the carrying of dishes. Only such foods as will bear transportation and be in tempting condition when ready to serve should be prepared. Plenty of waxed paper should be used to wrap sandwiches, cakes, etc., as it both keeps them fresh and holds them together nicely. Paper napkins and paper tablecloths are to be preferred to linen, and add to the attractiveness of the table.

The kind of luncheon we are to serve depends largely upon whether we wish to partly prepare it on the grounds where the picnic is held or whether we prefer to take everything ready for serving. Preparing a meal in the open generally affords a great deal of enjoyment. A good device which I heard of recently to take the place of a stove where the meal was being partly prepared was a piece of thin sheet iron about 18 inches by 30 inches. This was laid across two little banks of earth with the fire between (two logs would do equally as well). This not only does away with waiting for embers, which are necessary for good cooking, but prevents the flames reaching the food through the sheet iron. As well as answering the purpose for boiling the kettle, etc., it makes an excellent griddle for making toast or flap-jacks.

Salads and jellies are always enjoyed, but these can only be had when we are able to bring the dishes. Cake, tarts, cookies and candies are appreciated by those who have a sweet tooth, also dates from which the stones have been removed and the space filled with walnuts are good, or these may be stuffed with pulverized sugar and rolled in walnuts, and they make a nice finish up to the meal. Deviled eggs carry well if wrapped in waxed paper, and nothing tastes better.

SANDWICHES.

Sandwiches generally form part of the meal. In preparing the bread for sandwiches, cut slices as thin as possible and remove crusts. If butter is used, cream the butter, and spread before cutting from the loaf. Bread for sandwiches cuts better when a day old. Spread half the slices with mixture to be used for filling, cover with remaining pieces, and cut in

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Mix ½ cup sugar and ¼ cup butter. Add 1 beaten egg. Mix and sift 1½ cups flour and 2 teaspoons baking powder. Add alternately with ½ cup milk to first mixture. Bake 30 minutes.

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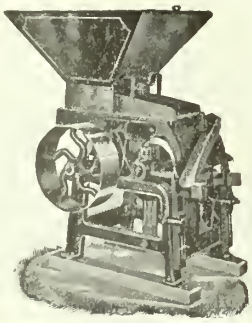

Oat Crusher.

squares, oblongs, or triangles. A doily placed on the plate on which they are served gives a better appearance. Almost any meat—ham, beef, chicken, etc.—cooked and put through a meat chopper can be used for filling; if a little pickle is chopped and mixed with the meat it makes them more tasty. Most people relish lettuce sandwiches. Put crisp lettuce leaves washed and thoroughly dried between the two slices of bread, having a teaspoon of mayonnaise dressing on each leaf. Equal parts of cheese and English walnuts chopped up together and seasoned with salt and cayenne also are good for fillings, and walnuts chopped up alone and mixed with mayonnaise dressing are generally liked by all. These are only a few of the fillings that can be used for sandwiches. Pimento cheese, peanut butter or cold boiled eggs mixed with mayonnaise dressing might be used.

COOKIES.

Plain cookies may be made as follows: One half-cup shortening, part butter and part lard, one cup sugar, two eggs, one-half teaspoon soda, one teaspoon cream tartar, and one-half of a grated nutmeg. Mix with flour to form a batter just stiff enough to roll. Roll thin. A little of the sugar could be saved out to sprinkle over the top when done.

Date cookies can be made if when cutting out the batter a small round cake cutter is used and a filling of dates is put in between two of the layers (these layers being cut the same thickness as for ordinary cookies) and baked.

Plenty of raw fruit is always in order; and for relishes, olives or walnuts stuffed with pimento cheese.

Pickles can be carried in a jar, as can also the fruit juice and sugar for the lemonade.

While the luncheon comprises the greater part of what we carry to the picnic, we can all bring with us plenty of good humor and cheerfulness. The games will be mostly impromptu and will not add much to the parcels unless it be a bat and ball or a few simple prizes; and if some member has brought a camera along, it will go a long way toward keeping the memory of a good time before us.

MY SASKATCHEWAN BABY.

By Dora Matheson.

A tiny little bit o' baby,
Pink and soft, and sweet,
I hold her close and love her
From her head down to her feet.

I open little fists to find
The color of the rose,
And hunt through drifts and folds of lace
Her cunning little toes.

Little sunbeams of the morning
Stopped to touch her silky hair,
And they loved it, so they lingered—
I can see them hiding there.

Eyes and lips and cheeks invite me,
Hold me, weave a magic spell;
Half of all the love I give her,
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Hot Weather Foods

Cold Dishes that May be Used as Staples

By WINNIFRED MARCHAND

FOR a few weeks now, cool dishes, both staple and light, will fill the greater part of the bill-of-fare for at least one meal a day. The farmer's wife appreciates as much as any woman the comfort of having a cold meal ready to put on the table a few minutes before the men come in to supper without heating the kitchen by an hour or two's fire, but she has to consider the problem of providing a substantial meal, and unfortunately many of the cold dishes that we see are composed chiefly of wind and water. The following are planned to be not only savory and inviting, but nourishing enough to be used as the main supper dish.

SAVOURY AND SUBSTANTIAL COLD DISHES.

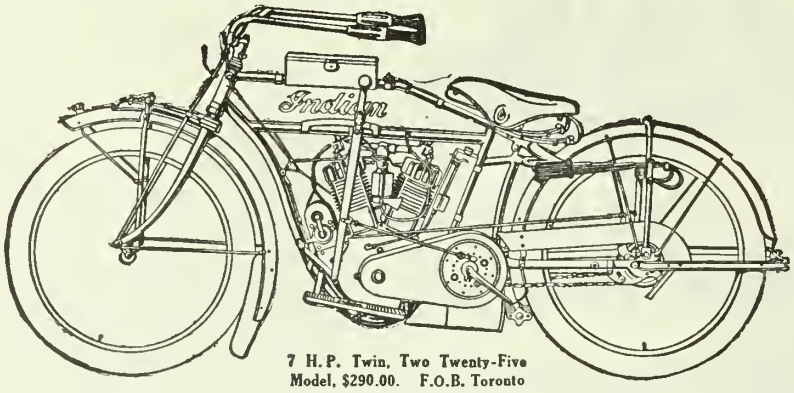
Potted meats are particularly good, because they make excellent use of the scraps, bone and gristle. Jellied chicken, generally considered a delicacy for Sunday night or company suppers, need not be so expensive as it sounds, because an old fowl is better than a young one for the purpose, and a shank of beef or veal cooked with it adds to the quality as well as the quantity. Cut up the fowl and the shank and salt and put on to cook, with water enough to cover. When the meat falls from the bones take it out and strain the liquor, and boil it down until there is just enough to cover the meat. Season carefully, put into a mold, and set away to cool.

Another excellent dish may be made from the remains of a cold roast by slicing the meat from the bones and boiling the latter for about half an hour. About ten minutes before taking this from the fire add a little gelatine (a large tablespoon to a quart of liquid), salt, mace, onion or whatever seasoning you like. Put the meat in a mold with alternate slices of hard cooked eggs, pour the liquid over and cool.

For a substantial, palatable, and economical cold dish, there are few foods equal to baked beans. They may be cooked by the crockful on washday, or sometime when there will be a steady fire for some time, and if your family are active and hungry they will never tire of them.

Take 2 lb. white beans, soak overnight, parboil, changing the water three times, and cook until soft. Put into a crock or covered lard pail and add 1 teaspoon mustard, ½ cup sugar and 1 lb. salt pork, and peppers. Cover with water or tomato juice and bake until the beans are meally.

Tomato Jelly.—An attractive and appetizing cold supper dish is made by taking a pint of stewed tomatoes, rubbing them through a sieve, and adding two tablespoons vinegar, two tablespoons sugar, ½ teaspoon salt, and a dash of cayenne. Let this come to a boil, and add ¼ of a box of gelatine softened in cold water, and one cup of cold cooked veal,



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By CHAS. B. HAYWARD

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The author has followed, in both biplane and monoplane models, the well-known types of Curtiss and Bleriot, choosing each as the simplest representative of its class in matters of construction and design. Detail drawings are given, with dimensions of all parts, the methods of shaping the struts and ribs, the form of running gear, the form and size of ailerons and rudders, the stretching of the fabric, the mounting of the motor, and assembling of the complete machine. The general instructions for flying, in so far as they can be given, are carefully laid down; the method of making a start; the conditions under which flights should be undertaken; methods of control; banking on the turn; and what to do in case of failure of any part or the stopping of the motor.

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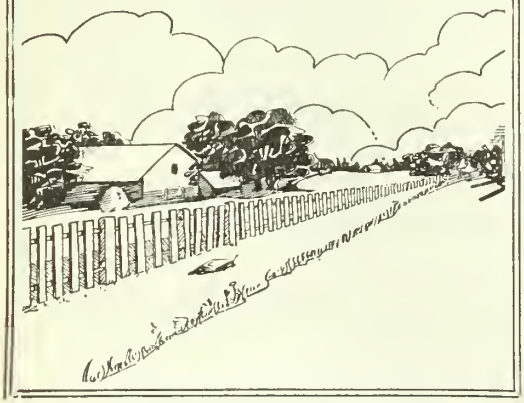

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beef or chicken, cut into dice. Boil one minute, turn into a mold, and serve cold on lettuce leaves. It is not necessary to use meat in this recipe, and the plain jelly may be served as an accompaniment to cold meat.

Deviled Eggs.—At this season eggs, unfortunately, seem to lose much of their popularity. If your family have tired of them, boiled, fried, or poached, you have still a surprise waiting here. Cook the eggs in the shell, until the yolk is mealy, then shell, cut in two, take out the yolks and mash fine with a small piece of butter, salt, pepper, mixed mustard and vinegar, or, which is better and more convenient, with a boiled salad dressing. Put the mixture back into the whites and garnish with parsley or lettuce.

Any housewife, especially on the farm where the garden furnishes a valuable part of the food supply, will find her problems lessened considerably by keeping a jar of salad dressing on hand. This is better if made rather stiff and thinned with cream just before using. Our cook books give so many recipes for salad dressings and salad combinations that we will only give one here—the idea being to show how—with a can of salmon which is ready kept on hand, and a few eggs—a pleasing and ample supper may be prepared at short notice. Flake the salmon and add enough hard cooked eggs (sliced) to give the desired quantity. Sprinkle chopped cucumber pickles through, and pour dressing over.

COLD DESSERTS.

A good cold dessert for supper may be made by taking any plain light cake, turning it into a glass fruit bowl, piling berries, sliced peaches or other raw fruit around it, and serving with boiled custard. In fact, this would make a light supper alone. A delicate and inexpensive Mock Angel Food may be used instead of the standard cake. Sift together three times 1 cup sugar, 1 cup flour, 2 teaspoons baking powder, a pinch of salt. Add to this 1 cup milk heated to boiling point, beat well and fold in the stiffly beaten whites of eggs (the yolks are used in the custard). Do not grease the pan, and bake in a slow oven.

Boiled Custard.—Heat 2 cups of milk to boiling, add ¼ cup sugar, thicken with 1 tablespoon cornstarch dissolved in a little cold milk. Beat the yolks of two eggs slightly and pour the hot mixture over them slowly, stirring to prevent lumps forming. Turn back into the saucepan and cook slowly until the custard forms a smooth coating on the spoon.

Raspberry Pudding.—Take 2 cupfuls of fresh raspberries, sprinkle with 1 cup fine white sugar. Heat a pint of milk to boiling, add the yolks of 3 eggs (beaten), and 1 tablespoon cornstarch dissolved in a little cold milk. Stir till it thickens, add a pinch of salt and pour over the fruit. Beat the whites stiff, with sugar, pile on top and brown in the oven. Serve cold.

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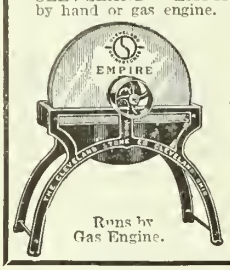

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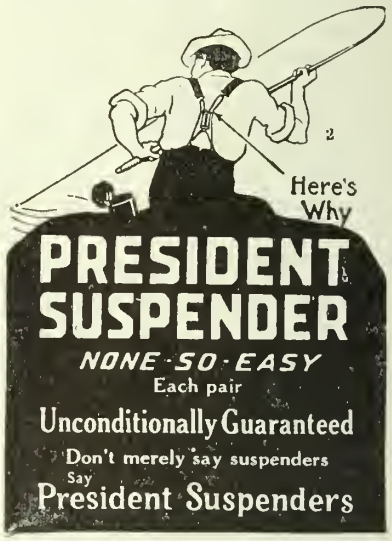

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Raising Pin-money on the Farm

How the Women and Girls May Add to Their Pocket Books

By JEAN McKENZIE

TO parody an old saying, it is better to be born resourceful than to be born rich. Certain it is that the majority of us who have not riches have great need of cultivating that quality, resourcefulness. Many girls living at home would be glad to use much of their spare time in a profitable manner, but the question is, how? In considering the quality of how to earn money at home, there are several things to be taken into account. First, how much time can one devote to this special work? second, your particular talent, or talents, and third, the needs and circumstances of your neighbors.

Every girl ought to be capable of earning her own living, should circumstances arise that would necessitate this. Even the girl whose position makes this seem absurd, will lose nothing by being able to exercise her talents in a profitable manner, for the business training acquired, and outside interest aroused, beyond the usual social round, cannot but prove beneficial. Besides every girl must delight in the feeling of independence, of having accomplished something worth while, that comes from the possession of money earned by her own efforts, and there is such a different sensation in spending money of your own earnings and in spending that more easily come by! I'm sure there is no girl on earth but who enjoys spending money, personally, let me confess it is one of my favorite amusements, and while it is true that familiarity might breed contempt, in this matter as in others, it has not done so yet, for reasons that I prefer should remain strictly private, and the novelty still remains.

To the stay-at-home girls who would like to earn their own pin-money, the following suggestions, which have been tried and found successful by country girls in various parts, may prove of interest. In their selection, pains have been taken to have only ones that are practical and within the reach of the average country girl.

For the girl who has a taste for cookery, a very pleasant as well as profitable means of earning money will be found in jelly-making, for sale. In the cities there is always a demand for home-made products, and when you let it be known that you will supply home-made jellies of different kinds, there will be no difficulty in securing all the orders you can fill. A very good way to advertise your work is to get the little glasses you can buy at the ten-cent stores, at three for five cents, and fill these with jelly. Write cards announcing that Miss ——— is ready to supply you with the following home-made jellies.

Name.	Price.
Apple	—
Crabapple	—
Grape	—
Currant	—

Mark the small glasses, "Sample; jelly sold in full-size glasses." Attach the cards to these little glasses and send them to the Women's Exchange, boarding-houses, nice hotels, and well-to-do private families.

Another very good way to earn money in the spring of the year is by the making of home-made marmalade. It is always so much nicer than the bought marmalade, and a great many families who do not care to make their own, yet will pay a fancy price to anyone who will supply them with the real home-made article. Good marmalade is very easy to make, there is a big margin of profit on it, and it always finds a ready sale. The girl who can and will make good orange and grape-fruit marmalade, will always have plenty to do in the season.

For anyone conveniently situated, as on a public road, or near a summer resort, and with time to give to it, there is no better investment than a porch and parlor tea-room. In the case I know of, two sisters, living in an old-fashioned country house, with wide vine-shaded verandas, are the joint proprietresses of such a tea room, and have found it very profitable. Their home is situated on a public road on which there is a heavy automobile traffic in summer, and this suggested the plan that was finally adopted. Neat signs were hung on the road half a mile each way from the house, where all who passed could see it, and the paneled, beam-ceiled living-room, and shady verandas, were given over for the visitors. The walls of the living-room were pale green, the woodwork white, while the tables and chairs were painted a soft green. With dainty china, beautifully laundered linen, and fresh ferns or flowers on each table, the room presented a most attractive appearance, as did the porch with its wicker furniture, porch-boxes of bright flowers, and palms and rubber-plants. The tea menu is as follows:

Tea, pot for one	10c
Coffee, pot for one	10c
Cocoa, whipped cream, per cup	10c
Afternoon tea salad	20c
Toasted scones, maple syrup	20c
Nut sandwiches	10c
Olive sandwiches	10c
Cheese sandwiches	10c
Salad sandwiches	15c
Chicken and tomato sandwiches	15c
Ices and ice cream	15c
Cheese and crackers	10c
Individual shortcakes	20c

The shortcakes are made of the different fruits in season, strawberries, raspberries, peaches, etc., and are very popular among the patrons of the tea room. Salted almonds and bon bons are served free with each order.

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"ELITE" combination for gentlemen who take pride in having their shoes look A1. Restores color and lustre to all black shoes. Polish with a brush or cloth, 25c. "BABY ELITE" size, 10c.

"DANDY" combination for cleaning and polishing all kinds of russet or tan shoes, 25c. "STAR" size, 10c.

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We can quote direct, or through your dealer. A card will bring Salt Information that will interest you and be profitable.

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OUR EXTENSION HIDES YOUR SHORT LIMB YOUR FEET LOOK LIKE PEOPLE NOT LAME WORN WITH ANY READY MADE SHOE OR SLIPPER. OPEN IN BACK NO LACING NOTHING LIKE IT

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There's a dealer in your town; he will be glad to show you.

Write us for Booklet "S." It contains some eye-opening facts and shows the many handsome designs.

Supreme Heating Co., Welland, Ont., Can.

A Young Farmer's Opportunity

We will pay liberally for the spare-time services of young, wide-awake, energetic farmers in every community in Canada. We need some one to look after new and renewal subscriptions to The Farmer's Magazine in your district. This is your opportunity to make your spare time earn you an extended holiday trip, buy you a new driving horse or buggy, or any one of the one hundred things you could buy with $50, $100 or $150. There are a host of people in your district that you could reach by walking, bicycling, or driving. They will readily give you a subscription to The Farmer's Magazine. You will do them a favor in bringing it to their attention.

The amount you make depends on the time given.

Write the Circulation Dept.

The Farmer's Magazine
143-153 University Ave.
Toronto, Ont.

There is no outlay connected with it, the work is very light, and her friends purchase eagerly all she can supply, though the local store handles any surplus. Her specialties are plain cottage cheese, English cream cheese, Swedish cheese, and Savory Pot cheese. Made into little rolls, and wrapped in oiled paper, and then in tin-foil, the cheeses are very attractive, and find a ready sale.

A neat little sign, "Picnic Lunches," hanging in front of an attractive-looking farm house, tells the story of another girl's source of income. Prettily wooded country, with a pretty lake, and a river for fishing, in the vicinity, call out many picnic and fishing parties, and the business done is a rushing one, in the season. The dainty lunches put up here are so well known in the neighboring towns now that people prefer to get them freshly made, rather than bother bringing them on with them. This girl keeps a supply of white paper napkins, oiled paper, and neat little lunch boxes on hand always. She also sees that she has some nice fresh bread, with cheese or cold meats for sandwiches, a cake, and some little pies, in the house always, for a stray fisherman may happen along at any time, but special orders receive more attention, of course. The prices asked vary, naturally, but the average price for a substantial lunch for one person is twenty-five cents.

Grape juice is very easily made, and the pure home-made article always sells readily. If there are grape-vines on your place that you can have the proceeds from, do as one girl did last year, and made a neat little sum, after paying expenses. The grape-juice was made, put into pint and half-pint bottles, and tightly sealed. The sale of this realized more than the grapes themselves would have brought and the additional labor a small matter.

CANDY MAKING.

Considering the small amount of capital invested in it, there is no line of work a woman can take up at home which will yield a larger income, than candy-making. Home-made candy is always pure and good, and if attractively boxed and wrapped there will be no difficulty in selling all one can make.

The woman going in for candy-making will do well to lay in a supply of candy-boxes, an assortment of colored papers that can be cut into suitable slips and fringed at the ends, a small quantity of paraffin paper to slip between the layers of candy, and to wrap the caramel or chewing candy in. A gallon of glucose, to use in the making of fudge, caramels, taffy is a very good purchase as it keeps the fudges moist and fresh for weeks, and gives a "chewy" quality to the caramels and taffy. Candy boxes can be bought in gross lots for a few cents a piece, and dainty wrapping paper, ribbons and self sticking-gilt or red tape, are a necessity.

For the girl with artistic ability, the decoration of dinner, tally, and menu cards will be agreeable work, and remunerative as well. There is always a market for these wares, for there is scarcely a village in these days too small

to support its bridge or euchre clubs, and its social round of village or luncheon parties. The tally cards for bridge or 500 may be furnished with pencils and cords attached or not, according to the order. Menu and place cards offer greater opportunities for originality of work than the tallies do. A practical knowledge of hand-lettering would not come amiss in this connection, for a hostess ordering menu cards may desire them hand-lettered, but this is an art not difficult to acquire. In disposing of these, to secure the custom of other's besides one's friends, it is a good plan to arrange with the stationer in the nearest town to keep a box of samples on his counter, advertising your work.

Pillows filled with cured rose leaves, pine-needles, and balsam silk, are the stock-in-trade of a young country girl and sell very readily.

Still another young girl collected the favorite recipes of all her friends, re-wrote them on index cards, and sorted them out into filing boxes, putting cakes, bread, etc., together, and these were offered for sale at a good price. In every community there is a woman whose bread is better than any one else's, another whose flaky pie-paste and delicious cake is the despair of other housewives, and a list of recipes, comprising the delicacies of all the cooks in the district is sure to find favor.

Quite a little money can be made at home by the manufacture and sale of creams, shampoos, and various toilet accessories. These articles are used in nearly every home, and it will not be difficult to persuade your friends to try your pure home-made products. Many women do not like to use the bought articles, as they are never so reliable as those made at home. Perfumery and sachets are a branch of this work, and can easily be made and sold at a profit by a woman. A clergyman's wife of my acquaintance makes all her Lenten "talent money" by this method, and her creams are eagerly sought after, they are so particularly good.

Beefing Buffalo

Continued from Page 18.

the services of a veterinary surgeon were not necessary in regard to the buffalo, during the past fiscal year. The buffalo can thrive under the most adverse circumstances. In comparison with the so-called hardy range cattle there is a vast difference in favor of the former. The pestiverous heel fly, which at certain times during the summer makes life a misery to the cattle, does not concern the bison in the least. When he has had his fill of grass and water he merely lies down with his hoofs under his body and contentedly chews his cud. Should a range cow fall in a hollow, feet upwards, there it remains and there it dies, unless helped up by an attendant. The bison, on the other hand, can rise from any position. A buffalo cow protects its young from wolves and other wild animals much more effectively than can the range cattle, and on such occasions the bulls join forces with the cows in protecting the calves. A buffalo cow will begin to

Fight Flies With Tanglefoot!

For 30 years Tanglefoot has been America's surest, safest, most sanitary fly-destroyer. It is non-poisonous, easy to use, and costs but a trifle. Each sheet is capable of killing 1,000 flies. And Tanglefoot not only kills the fly, but seals it over with a varnish that destroys the germs as well. In buying, ask for the genuine "TANGLEFOOT"—it costs you no more and lasts twice as long as the no-name kinds sold merely as fly-paper, or sticky fly-paper.

Made only by The O. & W. Thum Co., Grand Rapids, Mich.

Gasoline will quickly remove Tanglefoot from clothes or furniture.

How to Use

Open **Tanglefoot** slowly. In cool weather warm slightly. For best results place **Tanglefoot** on chair near window at night. Lower all shades, leaving one at the **Tanglefoot** window raised about a foot. The early morning light attracts the flies to the **Tanglefoot**, where they are caught. (33)

The "Monarch-Knit" Line
for out-of-doors

For the beach, the camp, the street, or on the lawn, there's nothing more comfortable than "Monarch-Knit." They give ease and grace to the figure, and are a protection against summer chills.

The latest feature in Sweater goods is the silk-knit coat, which is largely worn by all well-dressed women. They are light weight and comfortable, yet are a great protection.

If you want the correct outing coat, take this Ad. to one of your dealers and order one in any of the following colors:

Two-tone effects—Black and Copenhagen, Black and Kelly, Black and Cerise, Black and Gold. Solid Colors — Cerise, Kelly, Copenhagen, Black, White, Grey, Khaki, Tango, Peacock.

Prices range from $4.00 up.

"MONARCH-KNIT" is the Standard for STYLE, QUALITY and WORKMANSHIP.

L. 318

L. 312

Monarch Knitting Co.
Limited
Dunnville, Ontario, Canada
— Factories at —
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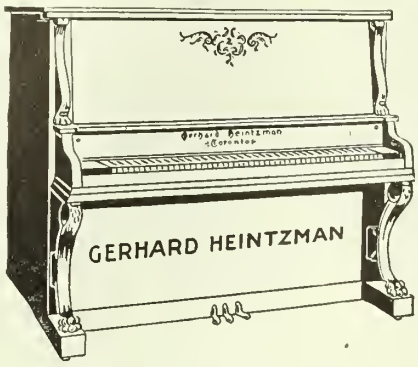

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Piano

in a position in the hearts of Canadian families never approached by any other make. We have always made it good, its thousands of friends have made it famous.

We would like to explain to you the reasons for the remarkable endurance of this instrument. Let us send you our Art Catalogue, giving fullest particulars.

Your present instrument taken as part payment, at a fair valuation, and convenient terms arranged.

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Your choice. Send one quarter (coin) for any six. Only one set to a customer.

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Get Your Canadian Home From the Canadian Pacific

An immense area of the most fertile land in Western Canada for sale at low prices, ranging from $11 to $30 per acre for non-irrigated lands and $35 to $75 per acre for irrigated lands. Terms one-twentieth down, balance in 19 equal annual instalments. Loan for farm development up to $2,000, also repayable in 20 years. Interest at only six per cent.

For full particulars apply to

DEPARTMENT OF NATURAL RESOURCES

Canadian Pacific Railway, Windsor Street Station.
Montreal, P.Q. E. J. MARTIN, Land Agent

breed at three years and will continue to do so up to thirty-three years old.

As seen through the butcher's eyes, the bison is by far the choicest beef animal and dresses better on the block, which means that a buffalo weighing one thousand pounds, live weight, would dress out decidedly better in the percentage of salable meat than would even a choice range cow. There is a very small percentage of waste. The adult buffalo is heavier than the ordinary animal in the common beefing breeds of cattle. The heaviest bull in the possession of the Government Parks Commission weighed 2,400 pounds, but from 1,800 to 2,000 pounds is the average weight. The buffalo dresses out better because of the smaller viscera and the much greater depth of the neural spines and consequent deeper fleshing. The bison has fourteen ribs and the common domestic cattle but thirteen. Where crosses have been made between domestic cattle and the buffalo the hybrid resulting shows even a greater depth of the neural spines and along these the flesh is deep and firm. The bybrid too dresses out better on the block than does even the pure blooded buffalo. In addition the pelt is better and the fur finer.

There is a big field for work and for study in cross-breeding the buffalo with domestic or range cattle. It is a work that the Canadian Government should take up and there is every reason to believe that it will. Several private individuals in Texas and in Ontario have taken up this work in a small way and while the goal cannot be easily reached there is a great field for endeavor. Mr. M. M. Boyd, of Bobcaygeon, has been experimenting along this line for several years and a splendid account of his work is to be found in Volume 4, of the published reports of the American Breeders' Association. One thing is certain and that is that it is a work requiring time, money and patience and a liberal amount of each. It only remains for some wealthy individual or an expert appointed by the Government and with sufficient funds for the work, to establish a breed of cattle that will represent a true cross between the buffalo and the domestic or range cattle, able to range for themselves under the most adverse range conditions and capable of reproduction true to type. The work in that direction already carried on privately, gives promise that such is within the range of possibility. Should success be achieved the value to the country would be almost incalculable, regardless of the cost. First of all there stands in the way a great difficulty in the fact that by mating the two distinct kinds of animals an abnormal condition, understood by veternarians, is brought about. Before the American Bison Association a member from Texas gave the report of experiments carried on by himself. Of sixty-three range cattle bred to buffaloes only thirty-nine calves were raised. The number of males was astonishingly small and only one reached maturity and this animal proved valueless from a breeding standpoint. Three of the cows, however, proved breeders, which demonstrates to some extent that by successive breeding it is possible to establish a true cross.

Cutting red clover for seed with the mower, to which a table has been attached. Very little seed is shelled by this method, although it takes two men to operate it.

Timothy and Clover Seeds

An Ontario Farmer Tells of His Experience in Raising Grass and Clover Seeds for Market

By FRANK H. WESTNEY

From present reports, the hay crop of Canada is going to be under the average this year. The continued dry weather during the latter part of May and June has had its effect upon the old and the new meadows. It often happens, though, that a poor first crop of new seeds is followed by a first-class second crop, where a good clover seed yield is taken off. Whether that will be the case this year remains to be seen.

The following article is written by a young farmer who has had considerable experience in raising timothy and clover seeds for market, selling from $500 to $800 of seeds per year.

FOR red clover we endeavor to follow corn or roots. We plant corn in squares, the rows 42 in. apart, and by personal and careful attention and the use of three different width of points, we usually have a reasonably clean field after corn is harvested. We do not plow, but disk in the fall with three horses of a 12-disk harrow, lapping the implement so that ground is worked twice. This leaves land open for winter frosts.

Our reason for not plowing is to avoid weed seeds from below, the surface ones having germinated. This is particularly true as to wild oats, and a badly infested field will soon be rid of this pest if this treatment is continued, as we find that the seed will not germinate after four years. The above cultivation is not so good for such weeds as twitch or couch grass and the much dreaded perennial sow thistle. If a field is infested with these, a deep fall plowing and a few cultivatings with ridging last thing in the fall is advisable.

As soon as the land is in fit condition in the spring, we get the cultivator busy. We do not cultivate deeply, just enough to make a good seed bed, and in sowing we broadcast with the grass seed spouts ahead of the drill. We then harrow, and if the field is somewhat rough, we roll and harrow again, but do not consider it advisable to keep a field rolled, as it permits a too rapid escape of moisture. Of course, it is much nicer to work on a field that has been rolled and left so, particularly in cutting the hay, and so to facilitate the cutting we roll the new seeds, as well as the second year's cutting, with a heavy roller as soon in the spring as the ground will bear the horses.

We favor barley as a nurse crop for seeds, but as we sow many oats and mixed grains, we are compelled to seed with these.

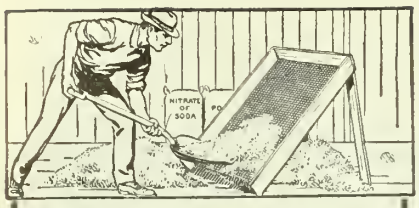
For mixture, we use more or less according to the condition of the ground, but about 10 lbs. red clover, 6 lbs. timothy and usually about 2 lbs. of alsike. We do not use the alsike if the field has recently had a crop of alsike, as the volunteer seed will be sufficient. This is not as heavy a seeding as is often advocated, but we find it sufficiently heavy. I cannot recall a year we were obliged to plow up a field of new seeds. The timothy and alsike will not affect the red clover for seed.

When the grain is up, we leave it entirely alone until cutting, unless we look it over for stray noxious weeds. When grain is cut and shocked, it is drawn in as soon as fit; we leave it as short a time as possible. The shocks are moved if necessary to prevent smothering.

A SEED CROP FIRST YEAR.

New seeds, if the best results are to be obtained, must not be pastured in the fall, unless too much growth develops. Even then stock, and particularly horses and sheep, should not be allowed on after October. If the pasture is not needed, perhaps a better plan would be to mow and leave the clippings lie, and what is lost in feed will probably be made up in increased yield the succeeding year. On one occasion about ten years ago we were unable to pasture the new seeds, and we cut a very fair crop of red clover, getting a little over three bushels per acre of very nice seed. It did not seem to materially affect the next crop, as we cut one for hay and then for seed, getting a somewhat heavier yield of seed the second year.

We usually cut first crop of red clover for hay. A better crop of seed usually results from pasturing until the 20th of June or thereabout. We never save the first cutting for seed, for several reasons. The bulk of hay is lost as far as the feeding value is concerned. The seed is always of inferior quality, with much more impurities, and the yield is, one year with another, considerably less. We have tried clipping alsike June 1st, but while the yield was more, the seed contained a large amount of Dutch or white clover. Timothy is saved for seed the second year;



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as high-priced American complete fertilizers contain. Your fertilizer should contain 4% of active nitrogen. Does it?

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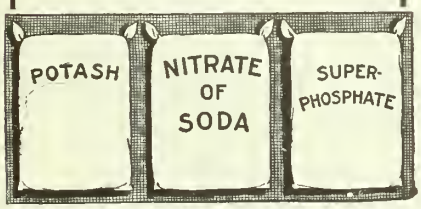

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BOOK ON
DOG DISEASES
AND HOW TO FEED
H. CLAY GLOVER, D. V. S.
118 W. 31st St., N.Y.

the first year the heads do not seem to properly develop and the yield is small.

For harvesting red clover, we use the old style self-rake reaper. This makes a minimum amount of work and leaves clover in nice bunches. When dry we put up in nice-sized forkfuls for pitching.

$200 FOR RE-THRESHING.

We use a rear-cut mower, with table attached, in cutting alsike. We have an extra seat rigged on the mower that both may ride, and by using an ordinary hand-rake the alsike may be drawn off and be clear of the mower and horses on the succeeding round. The reason we use the rear-cut mower is that the bar is behind the wheels, and therefore the wheels are not in the way of drawing seed off. If the growth is too heavy for above, we cut with two mowers and rake up in bunches, doing all while the dew is on. This makes considerable nightwork, but pays in the amount of seed saved. The seed is threshed directly from field. The huller is set in the barnyard, and with the use of a blower the straw is blown into a shed where no human being has any right to be. Alsike should be cut when about 50 per cent. of the seed appears ripe, but one must take chances on this, as what is right one year is wrong another. Care must be taken that the seed does not get too ripe or a large percentage will be lost. Unless weather turns out quite wet, we do not consider it advisable to turn until ready for drawing.

Timothy is cut with a grain binder and tied in sheaves. The cutting is done as soon as the heads of many are noticed to be shelling; it should then not be delayed, as it shells quickly once it starts. We have grown considerable timothy, but have yet to find a regular thresher doing satisfactory work. The seed is so light and small and so difficult to separate from the chaff. The suction of the blower is sure to draw most of the seed. In 1912 we threshed our timothy with a grain thresher, even going to the trouble of having the feeder removed, and every care was taken to ensure a good job. The price of seed was abnormally high, so we got the machine and re-threshed the crop, getting about 15 bushels of clean seed, or 25 per cent. as much as the first time. This at $8 per bushel paid well for re-threshing.

CLOVERS AND WEEDS.

Perhaps the greatest problem with which we have to contend in growing the small seeds is the weed problem, but, fortunately, most of the noxious weeds prohibited by the Seed Control Act are easily separated. Rib-grass or buckhorn appear to be the most troublesome in red clover, yet when we become acquainted with it, it may easily be suppressed. The seed is easily known, and if not sown will soon run out. The seed is perhaps one-tenth of an inch long, of a brownish polished color, and is about the shape of a date-stone. It is a perennial and therefore does not produce seed the first year. It may be known by its numerous matted leaves, somewhat like the common plantain, only the leaves are much narrower. When headed, it has slightly the appear-

This powerful little 1½ H.P. Engine

gives the farmer real service every season of the year. It is a small, economical little engine that will do the bulk of your hard work. Just the thing for the running of the separator, churning, washing machine, pumping, etc. Anybody can operate it. Easy to understand.

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THE FOSS & HILL MACHINERY CO.
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MINARD'S "KING OF PAIN" LINIMENT

The publisher of the best Farmer's paper in Maritime Provinces, in writing to us, states: "I would say that I do not know of a medicine that has stood the test of time like MINARD'S LINIMENT. It has been an unfailing remedy in our household ever since I can remember, and has outlived dozens of would-be competitors and imitators."

Be Safe!

Don't take too many chances with spavin, splint, curb, ringbone, bony growths, swellings and of lameness. Use the *old reliable* remedy—

KENDALL'S Spavin Cure

It has been used by horsemen, veterinarians and farmers for 35 years—and it has proved its worth in hundreds of thousands of cases.

Bickerdike, Alta., Jan. 29, 1913.

"I have been using Kendall's Spavin Cure for a good many years with good results. In fact, I am never without it."

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$1 a bottle—6 for $5, at druggists—or write for copy of our book "Treatise on the Horse" free.

Dr. B. J. KENDALL COMPANY
Enosburg Falls, Vermont, U.S.A. 79

The first cutting of hay is nearly always taken for fodder.

ance of timothy. The seed cannot be separated by the ordinary mill, but small quantities may be separated by spreading clover on a damp cloth; the rib-grass seed will stick to the cloth and the clover will fall off when dry. The above weed is not harmful, except as an impurity in red clover; in fact, it is largely used in England as a pasture mixture. Common ragweed is also bad in red clover, and, unlike rib-grass, is bad in everything, being very distasteful to stock and giving milk a bad flavor. If this weed is present in large quantities, red clover should not be grown for seed, but in small quantities it, as well as rib-grass, may be pulled.

Trefoil has given us much trouble in alsike, and, like rib-grass, is a cultivated plant in England. If any doubt exists as to a weed affecting the value of a crop, a plant may be sent to the district representative or to the Ontario Agricultural College at Guelph for advice.

Timothy and alsike must be kept separate. The seed of each is valuable separately, but have very little commercial value together. Therefore, in sowing alsike care must be taken that no timothy is in it, as the latter will have increased many times in proportion to the harvest. Timothy is not a paying crop for seed unless one's farm is quite free of such weeds as cinquefoil, sheep sorrel, and weeds of their nature. The dock and blue grass so common in timothy may be separated by wasting some of the seed.

CLEANING FOR MARKET.

In growing seed in large quantities it is advisable to own a mill rigged especially for cleaning the smaller seeds.

When we are prepared to sell, we send samples to seedsmen of Toronto or Montreal. If the highest bid is satisfactory, we accept; if not, we decline, writing each and stating why we decline; but we usually accept one, as there is sure to be one or more just in need of the seed we have to offer. We use strong paper bags in sending samples. Samples go at a special rate of 2 cents per 4 ounces. The package must be left so that it may be easily opened by the postmaster. The name and address should also be stamped or written in the upper left-hand corner.

The Seed Control Act has made the sale of seeds of inferior quality very hard. The United States prohibits the sale or entry of any seed into the country having more than 3 per cent. weeds by weight. Our own Government prohibits the seed merchants from selling any seed that will not grade No. 3; that is, red clover and timothy may contain not more per ounce than 400 weed seeds of all kinds and 80 noxious weed seeds.

Farmers offering seed for sale other than to be re-cleaned should be very careful, and if at all in doubt, should send a sample to the Seed Commissioner, Department of Agriculture, Ottawa, where it will be tested and a report made to the sender free of charge.

BEES IN ONTARIO

The provincial apiarist for Ontario reports that 38,222 colonies of bees have survived the winter. With the estimate of last fall this shows a loss during the winter of 7½ per cent. as compared with 11 per cent. last year and 15 per cent. the year before. The greatest loss in bees occurred, as would be expected, in the northern counties. Manitoulin, Haliburton and Algoma showed winter loss heavier than other places. Peel County also showed a heavy loss which was perhaps due to some local conditions.

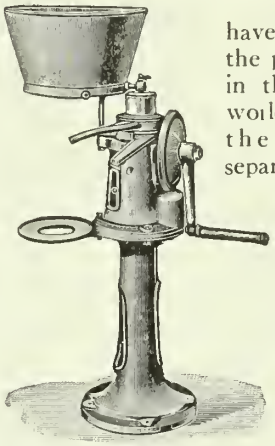
The clover crop has not been as promising this year as bee-men would like. Weather conditions have been favorable so far and everything points to a successful year for large productions of honey.

Satisfy Yourself About This

The EFFICIENCY, DURABILITY and SIMPLICITY of

Premier

CREAM SEPARATORS



have placed them in the premier position in the separator world. They are the most reliable separators on the market and easiest to operate.

Our Catalog "P" gives practical information on the separator and how it increases dairy profits. A card will bring it to you free.

The Premier Cream Separator Co.

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If your cows are poor feeders and do not give as much milk as they should, give them Edwardsburg Gluten Feed.

Full of Nourishment

It is a splendid bone and muscle builder and, besides increasing productiveness, will keep your cattle in splendid condition. It's an economical feed and is used on the Government Experimental Farms. If you want to make more money from your cows, try Edwardsburg Gluten. Order direct from us or from your dealer.

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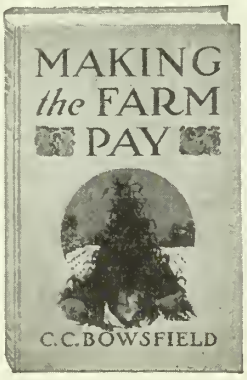
MAKING THE FARM PAY

By C. C. BOWSFIELD



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THE FARMER'S MAGAZINE

Montreal Toronto Winnipeg Vancouver

BOOK DEPARTMENT

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The Coming of Common Sense

Continued from Page 20.

in reach of all. The young people's society or the social club gives opportunity for the best of social life. In one neighborhood, to give a special example, last winter there was a series of lectures given, interspersed by a series of splendid concerts under the auspices of committees organized for this purpose. The young people secured a splendid lantern that is at the service of any who require it. In this way this community is reminded of the best that is being thought and done in the world of achievement and art. In the summer months in this same locality there are athletic clubs where old and young participate in tennis, bowls, indoor baseball, football, or baseball as their taste may direct. This same locality is noted for its good farming and its homes and schools and churches.

Best of all in this new rural life there is the growth of partnerships between parents and children. Too long the boys and girls were held back before making a start by the foolish idea that children must not assume responsibility till they were orphaned. By the operation of this bad old custom parents became rich, but quite as often the fortunes so hardly won were scattered by children who had come into riches without the training so essential for their proper management. The method that has proven valuable of recent years is to intrust the farm son or daughter with some form of agricultural responsibility for which fitness or a liking has been manifested. In many instances the father teaches all he can to his son in the particular line of activity that the son seems adapted to, and then allows the boy to acquire what skill he can, say from the Agricultural College or from practical association with some man who has made a reputation in this particular. A fair sum is advanced to assist the son in making a start, and then father and son work the thing out together. This method frequently means a new lease of life for both father and son. There is a fine instance of a son who was showing symptoms of losing interest in the farm who was presented by his father with the finest Holstein cow that money could procure. The performance of this animal was so satisfactory to the boy that the son was transformed into a first-class dairyman. The boy's bent on the modern farm is found and educated. By doing this father and son come to understand each other and enter into the most effective sort of co-operation.

This is simply doing for the farm boy what the father does for the son who chooses a professional career. He is trusted with the father's confidence before the father passes to his final reward. In other words, the modern farmer is no longer content to say to his son who remains at home, "You are ever with me and all that I have is thine." Rather, the son is taken into partnership and the father talks of "ours" more than he does of

"mine." The boy who cares for a few chickens and who is allowed to place the profits therefrom in his own bank, who graduates from chickens to bees, and from the bees to the care of Holsteins has his agricultural future assured, provided his business pursuits have been used as a means of cementing the best of good understandings between him and his father.

Land O' Gold

Continued from Page 24.

pulled off those trees of his. I know of two fellows right now who are preparing to plant out young stuff.

"And this all means money to me. Why, it means better times down here. You've given them a jar. Money will begin to move now, and it always moves towards the banks. Why, man, you're a benefactor. When the farmers make money they benefit everybody. In the first place, their produce is sold and it benefits the buyer. I'll think of you every time I look at those Spies I bought from Seth's orchard. Then, in the second place, when the farmers have money they stimulate trade. It helps everyone, right from the little shoe repairer on the corner to the big machine corporation in Toronto. I want to tell you we keep our eye upon the crop reports. Every one of us does."

I went home cheered, I can tell you. Three thousand dollars! Why, I had located the gold at last. When Dad worked his claim he hadn't dug in the right direction, that was all. I had stumbled upon the vein.

THE HAYSEED OF THE COMIC PAPERS.

But better still, I had jolted the neighbors. They were not the hayseeds comic papers depicted them. Too many were like Bill Mason. They had to be convinced at every step; they did not plan for themselves. But they were willing to adopt new methods, I discovered, once these had been demonstrated to be practical by one of their own kind right upon their land. My theory of leadership was vindicated.

So the men around very soon began to inquire of me regarding my work. I helped them willingly, for I realized that if our country was to be recognized as a winner at the apple game, it could only be accomplished by the combined efforts of many growers. Then only could we handle large quantities of fruit of each profitable variety, secure better railroad rates, and reach the best markets under the most favorable conditions. Moreover, I had seen the effects of the Niagara boom. The three-hundred-dollar land was selling already for six hundred. I knew we had the soil and the climate and were far enough north to secure the finest flavor. All we required was publicity.

So I became the apostle of fruit. Many and many a time I drove miles that winter to address a meeting of farmers. At home I talked apples to the neighbors individually, and at Molly's club of Jolly Old Folks. The following summer I was never too busy to visit an orchard to examine the work of some insect or fun-

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gus or to give instruction in planting, pruning, spraying, or in some other feature of management. I did it all gratis, too, and as a scheme became clearer to me, I did so all the more readily. I became nick-named Jimmy Fruit Jackson and was glad. At last I was becoming a man of importance among my fellow workers.

After the apples had gone that fall, I employed as many of the boys as I could with profit, because I wanted to operate my plant all year. Too many farmers only work their plants six months.

I started the boys pruning away the large stuff that winter, and had my barrels put together in a barn at Land O' Gold. Of course, these operations, covering a wide territory, had a great instructive value too.

But great as was my interest in fruit, there was a far greater one in my life. And now circumstances came upon us that for the time eclipsed all the orchard operations that ever were.

To Be Continued.

The Gentle Art of Milking

Continued from Page 30.

it, unheeded so long as the coarser particles could be picked out or otherwise separated? Stomachs rise at the thought, and yet such conditions would be harmless to bread in comparison to the injury they work to milk. But the smug saying is that "What the eye does not see the heart does not grieve over." Yet is there not a moral responsibility involved in the care of milk, particularly that intended for direct consumption by children? I think so and have always sought to govern myself accordingly.

Where two or more cows are to be milked, one should insist upon having a wash basin, soap dish and towel in the stable or adjoining dairy, aprons for the milkers and cloths to dampen the udders. Before milking, all the udders and flanks of the cows are neatly but rapidly brushed to remove hanging particles of litter or dirt. Then just before sitting down to each cow, her flanks, udder and teats are dampened with a cloth wrung out of fresh, clean water. Afterwards the milker hastily rinses and dries his hands, throws the water into the gutter and leaves the dish ready for the next milker. Besides the few cents a week for laundry, these precautions require about half a minute per cow at each milking. Milk thus drawn is really worth more than the ordinary stable product, but I would observe the precautions as a matter of duty, decency and self-respect just as one attends to his personal ablutions. Is it anything more than right?

Spanish Gold

Continued from Page 34.

"Do think of the treasure," said Meldon, persuasively.

"There's no treasure, or if there is, somebody else has got it. I tell you I wouldn't stay here to be ballyragged and bullied by a Chief Secretary for all the treasure in the world."

"I'm not putting the matter before you in that selfish way at all. Do try to be a little altruistic, Major. I am speaking about the treasure from the point of view of public duty. Either Higginbotham or Thomas O'Flaherty Pat, probably the latter, has the treasure. But that scoundrel Sir Giles means to steal it. I could see it in his eye that he meant to, and so could you. Sir Giles, as you know, is a man who sticks at nothing. He wanted to murder me to-day with a stone. We're the only people on the island who are in a position to interfere with his abominable plans. If we go away he'll do poor old Thomas O'Flaherty out of his hard-earned gold. He'll rob Mary Kate of her inheritance, of the money that would make life brighter for her. I tell you, Major, I've got to be very fond of that little girl and I won't let the thing be done. Or, if it's Higginbotham that has the money. Sir Giles will go at night and cut Higginbotham's throat. You wouldn't like to think of poor Higginbotham lying all gory in a lonely grave in Inishgowlan, far from his family burying-place and the associations of his innocent youth. It'll be your fault, remember, if he does, because you won't stay here to protect him. I should think that Higginbotham's ghost, a most objectionable-looking spectre, will haunt you to the end of your life. And you'll richly deserve it."

Major Kent made no answer. He loosed the halyard from the belaying pin at the foot of the mast.

"You're still determined," said Meldon, "after all I've said, to get up sail."

"Yes; I'm going home."

"You may get up sail but you'll not go home."

"Why not?"

"Because there's no wind, as you could have seen for yourself long ago if you hadn't been off your head with nervousness. It may amuse you to hoist the sails and get up anchor, and then drift about, up and down the bay, till night-time. The only result will be that you'll go foul of the Aureole or the Granuaile. If that's what you want to do, I'll help you, of course; but I must say it seems to me a rotten way of spending the afternoon."

Major Kent sat down on the deck and glared at Meldon.

"Why couldn't you have told me that before," he said, "instead of standing there and talking like a born fool?"

"I preferred," said Meldon, "to appeal to your higher nature first. I'd like to have seen you doing your plain duty voluntarily. There's very little credit in staying here simply because there's no wind to take you away."

Major Kent smiled feebly.

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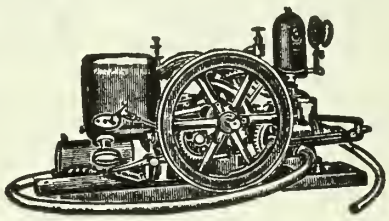

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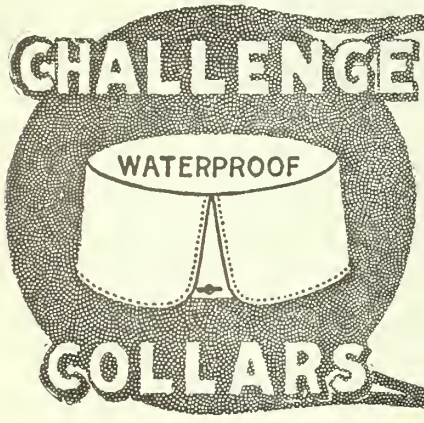

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"I give up," he said. "Say what you like to the Chief Secretary; make any muddle you can. You'll most likely land me in prison before you've done. You'll certainly have every newspaper in the three kingdoms making fun of us. I can't help it. I can do no more. I don't even mean to try."

"You needn't; I'll manage all right. All you have to do is to keep cool and avoid fuss and excitement. Come on shore and let us interview the Chief Secretary at once. I expect we'll find him quite a reasonable man. After all, a fellow can't climb right up to the top of the tree, become a Chief Secretary, a Cabinet Minister, and all that sort of thing, without being more or less reasonable. As long as a man is reasonable it's always quite easy to get on with him. The people who kick up rows and make themselves unpleasant are the smaller kind, the men with prejudices and ridiculous conventional views. Willoughby must have knocked about a good deal in his day. I know he's been ragged a lot by Suffragettes, and that shakes a man up. I expect we'll find him quite amusing."

A boat pulled by two men with a coxswain in the stern left the pier and headed for the Granuaile Major Kent saw her and pointed her out.

"Perhaps he's leaving at once," he said; the yacht has steam up still."

Meldon got the glasses and took a long look at the boat. following her in her course to the Granuaile.

"He's not in that boat," he said. "He wouldn't be pulling an oar himself. That wouldn't be suitable for a man in his position, and the fellow who's steering is evidently one of the yacht's officers. He has gold buttons on his coat Besides. they'd be sure to fly a white ensign, or whistle 'God Save the King,' or make some kind of show if they had a Chief Secretary on board; whereas that's just a plain, ordinary boat."

He laid down the glasses and looked at the pier.

"I see a stranger standing there with Higginbotham," he said; "a plump, little man in light grey clothes with a Panama hat. Give me the glasses again. He has a small, brown moustache and a thick, short nose. I can see him distinctly. It's certainly the Right Honorable Eustace Willoughby. I'd know him anywhere by his likeness to a cartoon there was of him in Punch a couple of weeks ago. I wonder, now, why the boat's going off and leaving him there?"

He shifted his position and looked at the Granuaile again.

"By Jove! the yacht's getting up anchor and hoisting the boat on the davits. She's off somewhere in a dickens of a hurry. But why have they left the Chief Secretary behind? What will he do? He can't surely mean to stop the night in Higginbotham's wigwam There's only one bed, and I happen to know that it's full of broken glass. It was just underneath the pane I smashed this morning when I hove the oars in through the window. All the bits of glass went into the bed; I saw them. This is becoming serious. The Granuaile is certainly off. He

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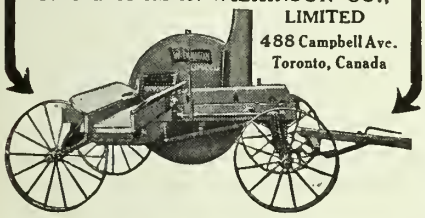

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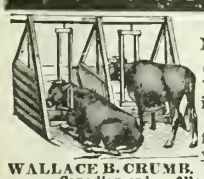

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must mean to sleep in Higginbotham's bed. He'll probably lose his temper if he does. No man likes being cut about the body with broken glass just as he's going off to sleep. I wouldn't like it myself, and I expect it would be perfect torture to a plump man like Willoughby. What had I better do?"

"I don't know," said the Major. "I dare say you're sorry now there's no wind. I think if I were you I'd go ashore and try to slip round some back way and sweep out Higginbotham's bed before night."

"I won't do that. I hate sneaking, underhand ways of doing things. Let us be gentlemen, Major, whatever else we are. We'll go ashore with our heads up. We've nothing to be ashamed of."

"You may go by yourself. I won't. I'll stay on the yacht till there's breeze enough to take her out of this."

"Very well, I'll go alone. After all, the man is a stranger here, and whether there's glass in his bed or not we ought to try and cheer him up. Higginbotham isn't very interesting. I'm sure he's boring Willoughby already. I expect the poor man is feeling a bit lonely too, seeing the Granuaile go off. By the way, I wonder where she's going to? She headed for the south point of the island, and that looks rather as if she meant to fetch Inishmore. I hope to goodness Higginbotham hasn't been talking about Sir Giles and the tuberculosis. I'd like to have a chance of making a good impression before I have to begin explaining that business. I wish Sir Giles hadn't gone off in a ridiculous huff. If we'd been friends I might have got him to stand over the tuberculosis and it would have been all right. The Chief Secretary couldn't well contradict a baronet, whatever he might think in his own mind. It isn't my fault Sir Giles took offence the way he did. I was telling him the literal truth. I couldn't start inventing a lot of lies just to please him."

"I don't see why you couldn't. You've invented plenty the last few days."

"I'm going on shore now," said Meldon. "I see Willoughby and Higginbotham strolling up together towards the hut. I don't suppose he's likely to go to bed at this hour of the afternoon, but in case of accidents I'll go at once."

"The only thing you seem to mind about is that broken glass. It doesn't seem to me nearly so serious as the other things."

"It isn't. Considered by itself, it isn't really serious at all. The thing is that Higginbotham won't know how it got there. He won't have any explanation to offer. The Chief Secretary, gashed and bleeding, will blame the wrong man. He'll think that Higginbotham has been playing off some new kind of apple-pie bed on him and he'll be upset about it. That will ruin Higginbotham's prospects in life. That's why I'm anxious about the bed. I must get off at once."

"Go on," said the Major, with a sigh. "The Lord alone knows what you'll do when you get ashore. Things can't be much worse, anyway."

"Don't be gloomy," said Meldon, as he got into the punt. "Just trust me

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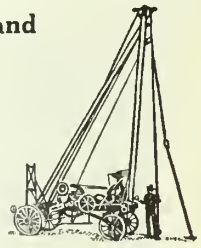

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a little. I'm not at the end of my resources yet, by any means. After all, what's a Chief Secretary? I suppose he's only flesh and blood like the rest of us. And besides, he's a migratory kind of bird. He's here to-day, and back in his native England to-morrow."

Higginbotham, his face white with anxiety and distress, ran down the hill from his hut and greeted Meldon as he came alongside the pier.

"Meldon," he said, "I'm awfully sorry, but you'd better go back to the yacht at once. Don't come on shore. Like a good man, go back. I can't tell you how sorry I am about it all. He's frightfully angry."

"Who's angry?" said Meldon, stepping ashore with the painter in his hand. "Do try to be intelligible, Higginbotham, and don't speak till you've got your breath. I hate having things gasped out at me. Who's angry?"

"The Chief Secretary."

"Has he gone to bed yet?"

"No, he hasn't. Why should he go to bed? He's up at my place sitting on a chair. I left him just for a moment when I saw you coming ashore. I ran down to warn you, in case you thought of coming up."

"If he hasn't gone to bed," said Meldon, "I don't see that he's anything particular to be angry about."

"It's about Major Kent and the geological survey of the island. He said he'd never heard of such a thing in his life. He said a most unwarrantable use had been made of his name. I can't tell you all he said. He called it intolerable insolence. I give you my word, Meldon, I wouldn't have mentioned the matter if I'd had the slightest idea that you were only pulling my leg. I really believed you. Why didn't you tell me?"

"If I'd told you I shouldn't have pulled your leg. What on earth would be the use of playing off a spoof on a man and at the same time telling him you were doing it? I wish you'd be reasonable, Higginbotham."

"Fortunately I didn't mention the National School or Sir Giles Buckley. When I saw how things really were, I dried up at once. I'm more sorry than I can possibly tell you. Somehow I never thought——"

"That'll do," said Meldon. "Don't go on apologizing. I don't blame you in the least. You acted in a perfectly natural way."

Meldon stooped and made fast the painter of the punt.

"You're not coming ashore, are you?" said Higginbotham. "Don't do it. Please don't. Go back to the yacht."

"I'm going up to have a chat with the Chief Secretary," said Meldon.

"But he won't speak to you, I know he won't. I tell you he's simply savage."

"It's for your sake I'm going. I want to prevent your getting into trouble. I don't want to have your prospects blighted on account of any misunderstanding with the Chief Secretary."

"But I'm not in any trouble. I assure you he doesn't blame me. He said so himself. It's only you he's angry with."

"If he's not angry with you now, he very soon will be. As soon as ever he gets into bed he'll be wanting to tear you limb from limb, unless I go up and straighten things out."

"But why? What has he to be angry with me about?"

"You'll find that out as soon as he gets into bed."

Meldon began to walk towards the hut. Higginbotham's fears came back on him and rendered him almost inarticulate. He seized Meldon by the arm and tried to hold him forcibly. With actual tears in his eyes he entreated his friend to stop. He ejaculated unintelligible sentences about "awful rows," "legal proceedings," and "public disgrace." He even mentioned high treason.

"Don't be an ass," said Meldon. "I'm going up to talk sense to that Chief Secretary. If everybody else he comes across is as much afraid of him as you are, it's quite time that somebody that isn't took him in hand. Pull yourself together, Higginbotham, and come up with me. I want you to introduce me. It's awkward walking in on a man you've never met without an introduction."

Higginbotham shook his head. After a last appeal he sat down helplessly on the grass. Meldon walked on towards the hut.

CHAPTER XVI.

THE Chief Secretary lay back in Higginbotham's hammock-chair. There was a frown on his face. His sense of personal dignity was outraged by the story he had just heard. He had not been very long Chief Secretary of Ireland, and, though not without a sense of humor, he took himself and his office very seriously. He came to Ireland intending to do justice and show mercy. He looked forward to a career of real usefulness. He was prepared to be opposed, maligned, misunderstood, declared capable of every kind of iniquity. He did not expect to be treated as a fool. He did not expect that an official in the pay of one of the Government boards would assume as a matter of course that he was a fool and believe any story about him, however intrinsically absurd. He failed to imagine any motive for the telling of such a story. There must, he assumed, have been a

The Granuaile's boat with Father Mulcrone in the stern approached the pier.

motive, but what it was he could not even guess.

Meldon entered the hut without knocking at the door.

"Mr. Willoughby, I believe," he said cheerily. "You must allow me to introduce myself since Higginbotham isn't here to do it for me. My name is Meldon—the Rev. J. J. Meldon, B.A., of T.C.D."

The Chief Secretary intended to rise with dignity and walk out of the hut. He failed because no one can rise otherwise than awkwardly out of the depths of a hammock-chair.

"Don't sir," said Meldon, watching his struggles. "Please don't stir. I shouldn't dream of taking your chair. I'll sit on the corner of the table. I'll be quite comfortable, I assure you. How do you like Inishgowlan, now you are here? It's a nice little island, isn't it?"

Mr. Willoughby succeeded in getting out of the chair. He walked across the hut, turned his back on Meldon, and stared out of the window.

"I came up here to have a chat with you," said Meldon. "Perhaps you wouldn't mind turning round. I always find it more convenient to talk to a man who isn't looking the other way. I don't make a point of it, of course. If you've got into the habit of keeping your back turned to people, I don't want you to alter it on my account."

Mr. Willoughby turned round. He seemed to be on the point of making an angry remark. Meldon faced him with a bland smile. The look of irritation faded in Mr. Willoughby's face. He appeared puzzled.

"It's about Higginbotham's bed," said Meldon, "that I want to speak. It's an excellent bed, I believe, though I never slept in it myself. But——"

"If there's anything the matter with the bed," said Mr. Willoughby severely, "Mr. Higginbotham should himself represent the facts to the proper authorities."

"You quite misunderstand me. And in any case Higginbotham can't move in the matter because he doesn't, at present, know that there's anything wrong about the bed. By the time he finds out it will be too late to do anything. I simply want to give you a word of advice. Don't sleep in Higginbotham's bed to-night."

"I haven't the slightest intention of sleeping in it."

"That's all right. I'm glad you haven't. The fact is"—Meldon's voice sank almost to a whisper—"there happens to be a quantity of broken glass in that bed. I need scarcely tell a man with your experience of life that broken glass in a bed isn't a thing which suits everybody. It's all right, of course, if you're used to it, but I don't suppose you are."

Mr. Willoughby turned, this time towards the door. There was something in the ingenuous friendliness of Meldon's face which tempted him to smile. He caught sight of Higginbotham standing white and miserable on the threshold. He made a snatch at the dignity which had nearly escaped him and frowned severely.

"I think, Mr. Higginbotham," he said,

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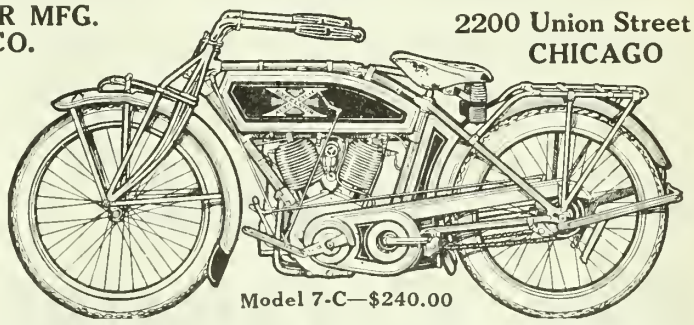

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"that I should like to take a stroll round the island."

"Come along," said Meldon. "I'll show you the sights. You don't mind climbing walls, I hope. You'll find the place most interesting. Do you care about babies? There's a nice little beggar called Michael Pat. Any one with a taste for babies would take to him at once. And there's a little girl called Mary Kate, a great friend of Higginbotham's She's the granddaughter of old Thomas O'Flaherty Pat. By the way, how are you going to manage about Thomas O'Flaherty's bit of land? There's been a lot of trouble over that."

Mr. Willoughby sat down again in the hammock-chair and stared at Meldon.

"Of course it's your affair, not mine," said Meldon. "Still, if I can be of any help to you, you've only got to say so. I know old O'Flaherty pretty well, and I may say without boasting that I have as much influence with him as any man on the island."

"If I want your assistance I shall ask for it," said Mr. Willoughby coldly.

"That's right," said Meldon. "I'll do anything I can. The great difficulty, of course, is the language. You don't talk Irish yourself, I suppose. Higginbotham tells me he's learning. It's a very difficult language, highly inflected. I'm not very good at it myself. I can't carry on a regular business conversation in it. By the way, what is your opinion of the Gaelic League?"

A silence followed. Mr. Willoughby gave no opinion of the Gaelic League. Meldon sat down again on the corner of the table and began to swing his legs. Higginbotham still stood in the doorway. Mr. Willoughby, with a bewildered look on his face, lay back in the hammock-chair.

"I see," said Meldon, "that you've sent your yacht away. That was what made me think you were going to sleep in Higginbotham's bed. I suppose she'll be back before night?"

"Really——" began Mr. Willoughby.

Meldon replied at once to the tone in which the word was spoken.

"I don't want to be asking questions. If there's any secret about the matter you're quite right to keep it to yourself. I quite understand that you Cabinet Ministers can't always say out everything that's in your mind. I only mentioned the steamer because the conversation seemed to be languishing. You wouldn't talk about Thomas O'Flaherty Pat's field, and you wouldn't talk about the Gaelic League, though I thought that would be sure to interest you. Now you won't talk about the steamer. However, it's quite easy to get on some other subject. Do you think the weather will hold up? The glass has been dropping the last two days."

Mr. Willoughby struggled out of the hammock-chair again. He drew himself up to his full height and squared his shoulders. His face assumed an expression of rigid determination. He addressed Higginbotham.

"Will you be so good as to go up to the old man you spoke of——"

To Be Continued.

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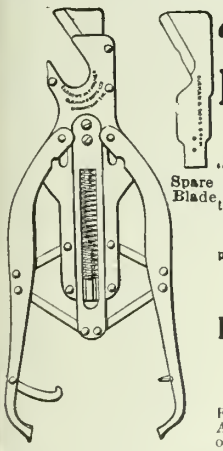

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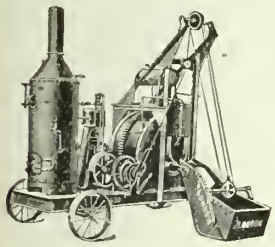

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Continued from Page 36.

house, as elsewhere on these poultry premises, the extreme of cleanliness is observed. No chances are taken with dirt or disease.

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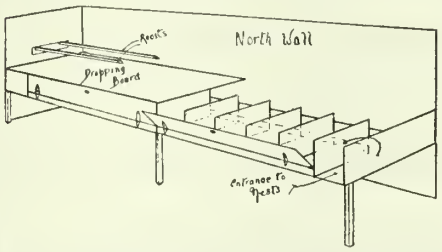

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productiveness and attractiveness. The next step was to let the public know what he had on hand. It is enough to make the average poultryman gasp when he hears that it is no unusual thing for Mr. Kennedy to spend annually about twelve hundred or a thousand dollars in advertising. He has issued a magnificent catalogue of his poultry containing two colored plates that are beauties of their kind. As a result of advertising he received in one season about twenty thousand inquiries, and last hatching season he received eighteen thousand dollars in orders for birds and eggs.

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13	lbs. Wheat Bran
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24½	lbs. Gunns "Shur-Gain" Chick Scrap.
½	lbs. Salt

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Feed whole grain in a litter night and morning: 2 parts Wheat, 2 parts Corn, 1 part Oats, and 1 part Buckwheat makes an ideal ration. Cut down night and morning feeding in case of pullets or fowls in heavy laying to induce heavy eating of the dry mash.

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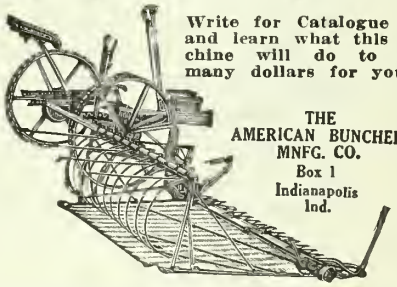

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The Electric Spark

Continued from Page 7.

the day, every day in the year. Suppose further that ten men actually use theirs on an average only six hours a day; then these twenty men are paying four times as high a rate as the others for power actually used. In other words, the twenty are helping to pay for the power used by the ten."

Prof. Day remarks that he understands the difficulty in the way at present of selling per k.w.h. to be the cost of securing a staff of men to read the meters.

However, the situation may be brighter than these investigations would tend to make us believe. While coal-oil lighting is cheaper it is much inferior in the house while there is no comparison at all in the barns. Moreover, the repairs on the gasoline engine might amount to considerable although, of course, there is a danger of the motor being burned out by lightning, too. Finally, our personal experience leads us to venture the opinion that unless a man is an expert his chances of reaching heaven are as those of the rich man or of the laden camel passing through the needle's eye, if he undertakes to operate a gasoline engine.

However, Prof. Day in concluding his evidence states that the convenience of electrical power may be its strongest friend. This is truly a mighty factor. It costs more to talk over a telephone often than to visit the neighbors at the cheese factory, but that has not checked the growth of the rural telephone lines.

Finally, the people are awaiting the Hydro-Electric power. The demand has been created already. And it is not hard to sell any manner of wares under these conditions.

A month ago a salesman was trying to sell coal-oil in Salford, a village in Oxford County. He told in rippling phrases of the excellence of his oil and of the nobleness of his company's efforts in attempting to break the wicked, wicked oil ring.

"Yes, I know the oil we get is abominable," replied the lady he was talking to. "That's why we're waiting for the Hydro-Electric to come this way. Then it will be good-by to this coal-oil lamp business forever, I hope."

And Salford is four miles from the nearest low-tension line. And the Hydro-Electric will be there before long. And the people of that district are not going to hold back over a question of price either. Convenience is worth many golden dollars.

So while we may not claim everything for our great province-wide transmission system, it is safe to predict that the engineer's dream will eventually come true —that the seed which was sown yesterday will blossom to-morrow in terms of more leisure and more money for the farmers of Ontario.

An Information Bureau

By STELLA BROOKS

THE DUTIES OF A GUEST.

Question—As it is my month, June, to take the topic for the Women's Institute, I felt I could not just write my paper without help, although it seems a simple topic. "What to do and what not to do when a guest" is the title. If you would kindly help me, I would be very thankful.

Answer—As you say, the topic seems a simple one; but there are many people who believe that the entire responsibility rests upon the hostess, which is not the case. I believe the first thing for us to do is to see that we arrive at the time arranged for. It is rather annoying to prepare for a guest or to go to a train to meet someone and to find that they have not come or have missed the train. Then we must be sure, if we are making a several days' stay, to bring the small articles that we may need, even though the guest room may be supplied with these. Also, we should bring clothing that we may be dressed suitably to go to any place we may be invited with our friends, and this need not mean that we will have to take any great amount of clothing. A morning dress, a suit and a couple of blouses, as well as a light dress, would be quite sufficient in the way of dresses if we were going for any considerable length of time.

We are generally told to make ourselves at home. This must not mean that we are to take possession of everything on the place; but if it is necessary that we adapt ourselves to the environment, and if we find things different to what we have been accustomed to, we must try in a pleasant manner to accustom ourselves to them. Be sure to inquire before retiring at what time breakfast will be served, and be sure to be on hand at the time set. Do not leave the room with garments and toilet articles strewn about, and be sure to turn back the bed coverings that the bed will receive the necessary airing. These seem little things, but sometimes they count for a whole lot. We must meet cordially the friends of our hostess who are introduced to us, however little there may be about them that attracts; we must cheerfully accompany the family to church, even though it be of a different faith from our own, and listen respectfully to the sermon and refrain from ungracious criticisms of the choir and the minister. Then we must show lively appreciation of everything done for our amusement, even though it may seem commonplace. We must always remember the spirit of kindness which prompted the affair, and even though we may have seen "pink teas," remember, though this may seem a little affair to us, it may seem a novel treat in the eyes of our hostess.

A guest should avoid giving extra trouble to her hostess or to the servants. We may offer assistance where cir-

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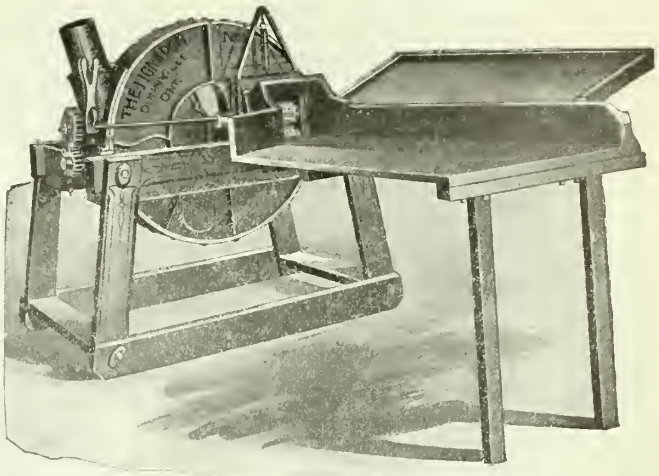

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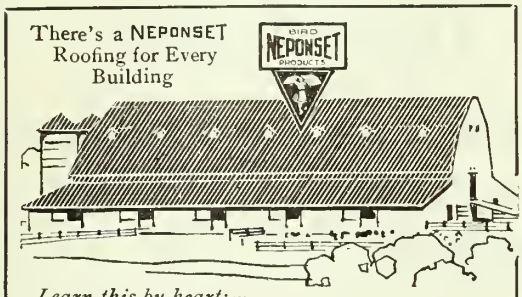

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Renfrew, Ontario

cumstances warrant our doing so, but must refrain from meddling with household matters when our help is not desired. We must be able to entertain ourselves easily when the hostess is otherwise busy, yet never seem to have any absorbing occupation that may prevent us from being ready to join in any project she may have. If there are children in the house, be kind and affectionate with them, without gushing insincerity or indiscreet petting, and if they are noisy and troublesome at times, do not betray any annoyance.

In short, we must aim to feel and act as though the interests and pleasures of the family are our own, and not make remarks that will be to their disadvantage. Then when the visit is over, be sure to send a little note to the hostess thanking her, and expressing the pleasure that the visit has given us. And I am sure it will be a pleasant visit if we have done our part.

COOL DISHES FOR SUMMER.

Question—I see many others come to you for help. I have a paper to prepare for our next Women's Institute on "Cool Dishes for Summer," and would be very much obliged if you would send a few points to me. I inclose an addressed and stamped envelope.

Hoping this will not trouble you too much.

Miss E. K., Ont.

Answer—I am sending you in advance a copy of an article that will appear in the July issue of the magazine, "Hot Weather Foods," by Winnifred Marchand. I think this will be what you require.

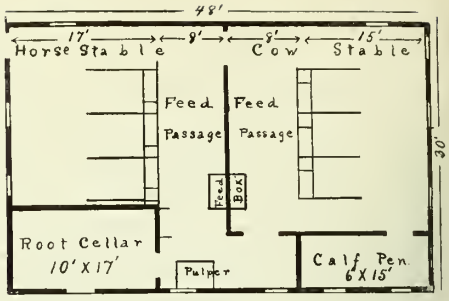
HOME LABOR MADE EASY.

Question—I have to prepare a paper at our Homemakers' Club meeting, subject, "Home Labor Made Easy," and would feel very grateful if you would give me any suggestions along labor saving lines.

Mrs. W. L., Sask.

Answer—This is a question to which we should give most careful thought and attention. I think if there is one thing more than another which adds to the work in the home, it is the accumulation of a lot of useless stuff. If we were to buy only such things as were useful, and would add comfort and beauty to the home, a great deal of unnecessary work would be saved.

Careful planning and having a system in doing our work goes a long way toward making it easier. A well-planned house is the greatest of all helps toward the lessening of home labor. The attached clipping, "An Ideal Kitchen," will give you an idea of how a kitchen can be equipped and arranged so as to simplify the work in that part of the house. We might mention some other things, such as having the kitchen table and sink made to suit the height of the woman who is to work at them, as helps in the kitchen. A dumb-waiter would save many steps in carrying food up and down stairs to and from the cellar. A fireless cooker will save a great deal of time in the preparation of meals; a factory-made article can be purchased for about $6 or $7. A wind-



mill will pump water for supplying the house, and if a gasoline engine is used and placed conveniently to the house, it will run the cream separator, and churn, and also run the washing machine; it would run the vacuum cleaner, which should replace the broom in removing dust.

The laundry work is perhaps the hardest work in the home, and the clipping I have attached, "Labor Savers in the Home Laundry," from our December issue, will give you a number of suggestions that will be found helpful in this department of the work. Where we are not fortunate enough to have electricity in the house, an alcohol flat-iron, which costs about $3.50 to $4.00, is found to be of great service.

I might also mention that rugs are much easier to keep clean than carpets.

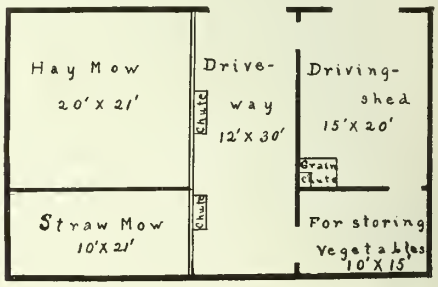
We hope to hear from you from time to time of the work your club is doing.

SMALL BARN PLAN.

Question—I am intending to build a barn, and as I am a market gardener on a small place, I don't require a very large building. I want room for two horses and two cows. I want to feed my stock from in front. I also want a shed in connection with the barn, large enough to hold four rigs. There would be no objection to having one rig in front of another as long as the second rig would go in far enough to close the doors. I would like the shed to have a loft over it and be on the same level as the barn. If you would make a sketch for me and show it in your magazine, I would be very much obliged.

U. B. K., Dixie.

Answer—I am sending a sketch of a small barn which may offer some suggestions for you. It will also appear in our June issue. The plans will explain themselves as you look over them. You will notice that the feed box is not directly over the bin for grain on the driving shed floor (placed here for convenience in unloading and storing). The spout from the chute will have to slant. I thought it might be convenient for you to have a room on the barn floor for storing vegetables in the fall from time of gathering to marketing.



The Truth About Fertilizers

The Hapahazard application of Soil Foods is Dangerous and Expensive

By H. F. EAST

THE farmer will at once say to himself, when he studies his land, "I grew a crop of oats and clover here last year, and gave the crop while it was growing artificial manure, superphosphates, and nitrate of soda. What is the most profitable crop to follow?" "A potato crop," will be the answer, as the elements in the soil will save an outlay, and with the aid of a good dressing of farm-yard manure the crop can be produced to give a good yield as the tubers will thrive and derive their nutriment from the "artificial" that was put on for the oat crop. The question of fertilizing the soil as effectively and economically as possible engages the attention of the farmer of to-day.

The question is: What kind of a fertilizer is the best and most economical to use? The varied forms of agricultural crops cultivated by the farmer make the need of a well-balanced general fertilizer more and more apparent. The constant researches of chemists have brought to light in our generation many sources of potash and phosphoric acid hitherto unknown or discarded. But the one difficulty experienced by chemists and others preparing artificial manures is that of "fixing" the needful ammonia so that it may be kept from combining with the atmosphere and at the same time be always in a state in which it can be appropriated to the crop. We cannot supply crops with nitrogen directly, but in all good manures there is a certain proportion of it in combination, and in many instances the percentage of nitrogen is made the test of a value of a manure. These fertilizer element vehicles are at the disposal of the consumer in countless numbers and the farmer finds himself deep in thought at the problem presented.

Fertilizers in which nitrogen is derived from nitrate of soda and sulphate of ammonia may always be depended upon and will always stand first to the up-to-date farmer. Of late years large importations of guano have placed a very valuable utility fertilizer before the farmer. Guano besides containing generous proportions of all chemical elements possesses some rather peculiar conditions not found elsewhere. The varied grades of guano are all found to not only advance quickly to a complete resolution to the fertilizer elements, but they seem to improve the mellowness of the soil. We must admit where the land is cropped year after year on the intensive cultivation plan that a certain amount of plant food is taken from the soil, and unless this is returned in some form or another the land becomes robbed of its fertility. In the ordinary farm and garden where the land receives the bulk of farm-yard

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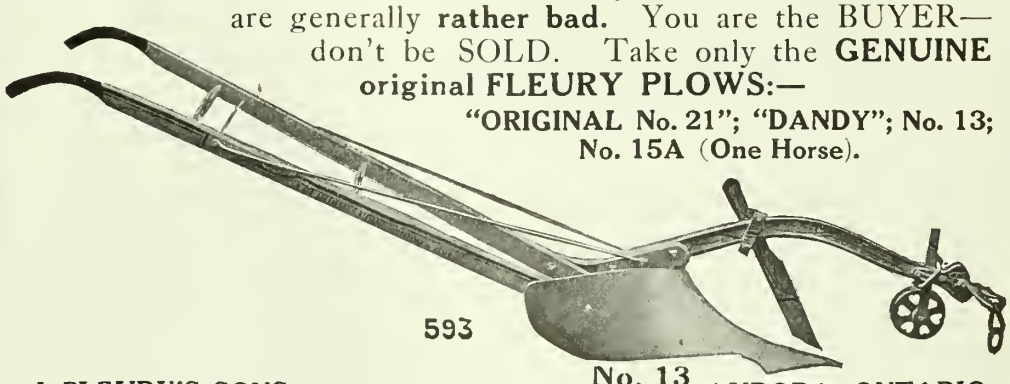

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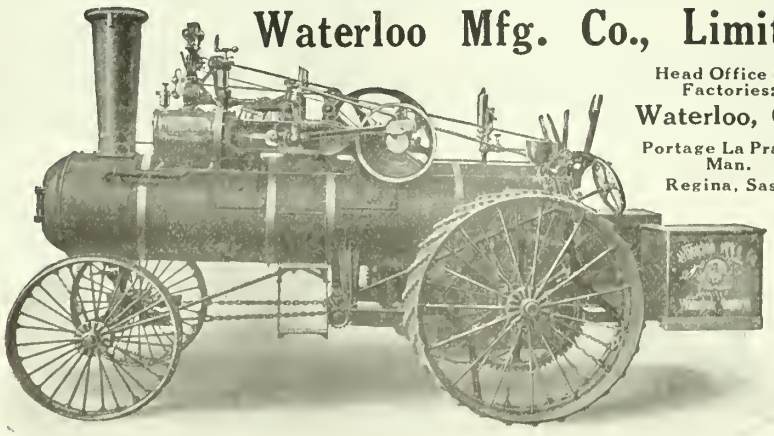

FARMER'S MAGAZINE

Educational Directory

For Nineteen Fourteen.

An Authoritative and Up-to-Date Directory of Private Schools—Colleges —Correspondence Schools—Trade Colleges and Co-educational Institutions — Riding and Nursing Schools.

GIRLS' SCHOOLS.

Westminster College, Bloor St. W., Toronto.
Convent of Congregation De Notre Dame, Kingston, Ont.
Moulton College, Bloor St. East, Toronto.
Westbourne School, Bloor St. W., Toronto.
St. Margaret's College, Toronto.

BOYS' SCHOOLS.

Upper Canada College, Avenue Road, Toronto.
Western Canada College, Calgary, Alta.
St. Andrew's College, Rosedale, Toronto.
St. Jerome's College, Berlin, Ont.
St. Clement's College, North Toronto. After Sept. 1st, Brampton, Ont.

CORRESPONDENCE SCHOOLS AND BUSINESS COLLEGES.

Canadian Correspondence College, 15 Toronto St., Toronto.
Central Business College, Yonge & Gerrard Sts., Toronto.
Woodstock Business College, Woodstock, Ont.
Shaw Correspondence Schools, Y.M.C.A. Bldg., Yonge and Gerrard Sts., Toronto.
British American Business College, Yonge St., Toronto.
National Salesman's Training Association, 806 Kent Bldg., Toronto.
Home Correspondence Schools, Dept. 253, Springfield, Mass.
Franklin Institute, Dept. 189, Rochester.
Kennedy Shorthand School, 570 Bloor St. W., Toronto.

MUSICAL INSTITUTIONS.

International Institute of Music, Dept. S., Fort Wayne, Ind.
American School of Music, 5 Lakeside Bldg., Chicago.
Slingerlands Correspondence School of Music, Dept. 34, Chicago, Ill.
Easy Method Music Co., 265 Wilson Bldg., Toronto.
Numeral Method Music Co. of Canada, 225A Curry Hall, Windsor, Ont.
U.S. School of Music, Dept. L., 225 Fifth Ave., New York.

AUTOMOBILE AND TRADE SCHOOLS.

Practical Auto School, 685 Beaver St., New York.
Y.M.C.A. Automobile School, 278 Broadview Ave., Toronto, Ont.
Franklin Institute, Dept. 189, Rochester.

SCHOOLS OF VENTRILOQUISM.

O. A. Smith, 823 Bigelow St., Peoria, Ill.
B. J. Murfin, Box 222, Guelph, Ont.

SCHOOLS OF NURSING.

Dominion School of Nursery & Massage, 263 College St., Toronto.
Red Cross School of Nursing, 358 Queen St. W., Toronto.

SPECIAL SCHOOLS.

Prof. Jesse Berry, School of Horse Training, Box 381, Pleasant Hill, Ohio.
L'Academie De Brisay, 416 Bank St., Ottawa.
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UPPER AND LOWER SCHOOLS

Calendar sent on application
Autumn term commences Sept. 10th, 1914
Rev. D. Bruce Macdonald, M.A., L.L.D., Headmaster

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PALMAM QUI MERUIT FERAT

Autumn term begins September 10th, 1914, at 10 a.m. Boarders return on the 9th. Senior and Preparatory Schools in separate modern buildings. 50 acres playing and athletic fields, with rinks, gymnasium and full equipment. Detached infirmary, with resident nurse. Summer Camp at Lake Temagami, conducted by the Physical Instructor of the College. SUCCESSES 1913—Honors (Matriculation) 31, Pass Matriculation 10, Royal Military Colleges Passes 3. All particulars on application to ARNOLD MORPHY, Bursar. 73-E H. W. AUDEN, M.A., Principal

manure, artificial manures may not be so liberal, and generally speaking one crop will follow another of the leguminous tribe. But to growers who depend upon a certain acreage to give them a living and where special crops are produced to yield a maximum at a minimum expenditure it has become necessary to help the manure with stimulants. Without the aid of humus no crop could give productive results. Artificials must be applied at certain stages of the year, taking the form of kanit or basic slag. These are best, when plowed in in the fall.

The various forms of phosphates and potash give results by sowing broadcast just before seeding time. Nitrate of soda, as most readers of *The Farmer's Magazine* know, is applied during the growing of the crop, when it is well above the ground and at periods of three weeks during the growing of the crop. Nitrate of soda contains about 15 to 16 per cent. of nitrogen.

At this point, a word may be of great interest to the farmer on the destruction of the wireworm by the use of nitrate of soda. A prevention is always more advantageous than a complete cure. The proper time to apply nitrate is either when grain is sown, or shortly after it shows over the ground. The latter has the merit of giving the material when the plants are at a stage where they can absorb it at once, and, if not too long delayed, before the worms have made their attack. The addition of two hundredweight of a high-class superphosphate, and one hundredweight kanit to one hundredweight nitrate of soda makes a useful top dressing giving such vigor to the growth of the plants that they are quickly past the dangerous period. This mixture may with the preatest propriety and best results be applied at the time of sowing, harrowing it in with the seed.

This dressing besides being a complete check to the injury inflicted by the wireworm is most useful as a manurial dressing increasing the bulk of straw to grain crops to such a degree that it will pay for the entire application, and also adding to the weight and quality of the grain leaving a good margin of profits for the expense incurred. Marigolds, for instance, respond to nitrogen; turnips to potash, phosphoric acid and nitrogen. The safe quantity applied for a turnip crop is:

54 lbs. potash,
20 lbs. phosphoric acid,
32 lbs. nitrogen

Total 106 lbs. per acre.

This has been estimated to give a yield of 700 bushels per acre.

In the growing of the well-known household crop, the potato, to which crop every farmer looks forward for a heavy yield, sulphate of potash, not nitrate of potash must be applied, as nitrate of potash causes the potato to get waxy and spongy and also causes the tubers to be of an inferior quality. A good dressing is composed of:

74 lbs. potash,
21 lbs. phosphoric acid,
46 lbs. nitrogen.

Total 141 lbs. per acre.

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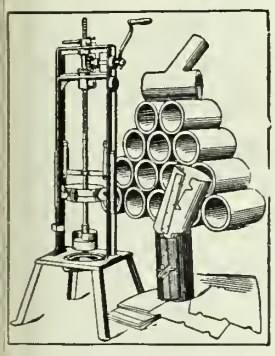
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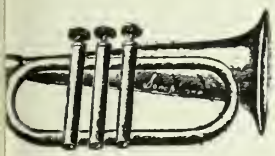
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ABSORBINE, JR., antiseptic liniment for mankind. Reduces Painful Swellings, Enlarged Glands, Goitre, Wens, Bruises, Varicose Veins, Varicosities, heals Old Sores. Allays Pain. Will tell you more if you write. $1 and $2 a bottle at dealers or delivered. Book "Evidence" free. Manufactured only by W. F. YOUNG, P.D.F. 482 Lymans Bldg., Montreal, Can.

An average yield of 200 bushels per acre will result.

In dealing with the subject of fertilizing a corn crop in the Iowa province of the state around the Shenandoah district, the writer last year had a conversation with one of the large growers and gathered that the best results were produced from a mixture of:

130 lbs. nitrate of soda,
400 lbs. muriate of potash,
100 lbs. phosphate.

Total 630 lbs. per acre.

The writer came away during the harvest time and could not gather the actual returns, but judging from the crops, it must have been heavy.

It must be borne in mind that fertilizers cannot and will not take the place of good seed. It may cost more in purchasing "pedigree" seeds, but it does not pay in the long run. Fertilizers cannot take the place of good farming. They are not stimulants, but are direct food agencies and if applied economically with a heavy dressing of farm-yard manure, the profits from their uses will give a good balance.

The practical conclusion is that in the treatment of the soil a skilful farmer will endeavor to promote the fertility by affording the natural influence of rain, frost, and sun the full opportunity of liberating the constituents that are locked up in the staple by restoring in the form of refuse as much as possible of what the soil has parted with in vegetation, and by the addition of such fertilizing agents as are adapted to rectify the natural deficiencies of the soil. Thus instead of following a process of exhaustion the resources of the farm and garden may be annually augmented.

STIMULATING PLANT GROWTH WITH X-RAYS.

Experiments made by Dr. Schwartz, a German scientist, show that X-rays stimulate the growth of plants and of living tissue in general, but in order to produce good results it is required to adjust the value of the rays in order to prevent a destructive action, such as can also take place without due care in making use of them. Should the exposure to the rays be too long, the effect can exceed the proper limits and become dangerous. Working upon plants, he finds that an under-exposure of 30 seconds has no appreciable effect of any kind upon the growth, and, on the contrary, a long exposure of five minutes is seen to alter the tissues and hinder the growth of the plant. The proper time appeared to be 150 seconds, and shortly after exposure to the rays the plants were so much stimulated that in three weeks' time they had grown to double the height of the other specimens. Such experiments were made with the use of young sprouts, and not upon plants in an advanced state of growth. As to the effect on the tissues of the human body, he finds that in the case of wounds where there is a decrease in vitality of structures, this is stimulated to quite a degree, so that, for instance, an obstinate would will heal up after a few *scances.*

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The Profession of Farming

Continued from Page 11.

mental shrubs and shade trees on the home grounds tell their own story of building for the future.

The house is one of the finest farm homes in Canada—a handsome well-planned building with large airy rooms, a gas furnace and lighting system, and a bathroom and water supply. From a well beside the house a windmill pumps the water to a tank in the house, the overflow going from here to the barn. The rooms downstairs are all finished in hardwood grown on the farm, an item of some sentiment as well as intrinsic worth. This with up-to-date furnishings, baby grand piano, gas grate and flowers that would be a credit to a hot-house, make this an ideal type of Canadian country home. There is nothing superficial there for show. The family, two very bright girls, are having the best the country can afford in the way of education and wholesome life, and the warm atmosphere of the home remains with you long after you leave it.

The Man in Salesmanship

Continued from Page 12.

Successful sales means saving the profit for the farmer, the right man to get it.

In the pure-bred stock business there is room for service salesmanship. Too often a pure bred is a mongrel of the worst kind; the farmer raising them, an agricultural hobo. He who depends upon a name to sell his goods without any regard to the quality behind the name is assuredly imposing on the public. The Shorthorn business has suffered probably the most of any from dead-beats who knew no more about animal breeding than they did about peddling buns. The mismating and the tubercular non-performers in their herds have made honest men weep. Holstein men, as well as breeders of Jerseys, Ayrshires, and milking Shorthorns, are avoiding the errors by their records of performance. True Shorthorn breeders are also being recognized well.

Many a Shorthorn breeder has made a fortune by reason of his ability to sell well, regardless of quality. In other words it was clever trickery that did it.

The Holstein calf that sold for $20,000 and the Jersey bull that topped the Cooper sales, were sold by clever salesmanship. These animals were quality stuff that could return quality goods, and the public paid for them, knowing they would give returns.

The sales of Duthie's Shorthorns and of Baron's Pride Clydesdales for fancy prices tell well of real salesmanship. There is a reason. These things don't happen. There was honor and brains somewhere behind the transaction. You can't found a permanent success in farming on knavery and trickery any more than you can make water run up hill.

On the Farm in July

By GRASMERE

FLY TIME IS TRYING.

JULY is a very trying month to both man and beast owing to the hot weather, the hard work, flies and insects. A good spray solution is of much use to the dairyman. The cows should be sprayed twice a week. They also should be provided with shade from the midday sun. Many plan to keep their cows in the barn during the heat of the day, allowing them to pasture at night. Care during this month means much to the returns of the year.

Keep all breeding places of flies thoroughly cleaned out and disinfected. Use whitewash, lime, and carbolic freely.

GREEN FEED.

In many parts of Canada dry weather has set in with a vengeance, and the man who was wise enough to plan for a field of corn, millet, vetches, or rape, or who has a summer silo has the laugh on the other. A writer in New Brunswick says that his mixture of oats, peas, and hairy vetches came in very nice for his ten cows. He tried the green feeding in July in his first year from college. Weighing the milk that summer soon settled the whole question. Now there is no more question of getting green feed on that farm.

HAY CUTTING.

The most of the timothy and clover hay in Canada should be cut early in the month. Start cutting clover before the blossoms start to turn brown. Timothy makes the best feed when cut about the first bloom. Assuredly timothy that is left to the second bloom loses much of its available nutriment. Altogether too much hay goes into the market that is worth very little more than straw. Any man who has had to buy hay in the spring knows what a lot of useless stuff is forced upon him. A good haymaker in a neighborhood will always be known by the quality of his hay in the spring. The second cutting of alfalfa will be ready about the end of the month. This crop if left for seed will not be ripe until September.

POTATO BUGS AND BLIGHT.

Potato-growers will have to make a sharp fight against bugs and blight this month. One hot day with the bugs in the potato field will destroy from one-eighth to one-half of the total crop. A power sprayer that will do four rows is needed by the commercial grower, and two acres can be sprayed in an hour. Use paris green and water for the bugs and Bordeaux mixture for the blight. Do not use lime sulphur on your potatoes.

HOT WEATHER CULTIVATION.

Do not forget the cultivator on the hot days. Big money returns are made with each cultivation. "Talk about raising foxes in Prince Edward Island," writes one man, "give me the cultivator and the big potato field and I will make dividends." Especially also does this apply to the corn field. Riding cultivators that handle two rows successfully are now on the market. Cultivating in the morning of a hot day will kill more weeds than any other time.

THE SUMMER FALLOW.

The prairie farmer who summer fallows will need to get in some good work this month as it is the slackest time for its operation. Breaking new sod can also be done this month.

WITH THE PIGS.

The hog-raiser who has provided himself with a moveable fence and a clover pasture will have solved the question of cheap summer feeding. Provide shelter for the hogs from the heat of the day and from the flies, and see that they have

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Do not delay Writing

Farmers's Magazine

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plenty of good water. Prices for pork have been falling during July but the scarcity in the stocks of the Western packers make many people prophecy big prices for the fall.

THE TURNIP CROP.

Turnips should be thinned this month and scuffled every week. The mangolds should receive weekly cultivation also. Sow white turnips this month.

BUCKWHEAT SOWING.

Buckwheat is often the last resort of the farmer. When other crops fail, he can sow buckwheat and get a god return on his land. Sow a bushel to the acre of mixed variety. For best results secure a good seed bed before sowing to assure uniform germination.

IN THE ORCHARD.

Watch for the appearance of scab. It will pay almost any orchardist to spray again this month with the lime sulphur solution. Cease cultivation about the middle of the month and sow your cover crop if there is danger of too much wood growth in your orchard. On the other

Young turkeys enjoy the hiding places in the hay fields.

hand if trees would suffer from the attraction of the moisture of the growing crop, it might be well to cultivate a little longer and then sow buckwheat, vetches or rye.

HARVESTING GRAIN.

The harvest which began with the cutting of wheat in June in the southern states is already upon Canada also this month, as the harvest line travels north rapidly. The wide outlook in the United States was never better. Conditions in Canada at the time of writing are also good, excepting the hay and grain crops in some parts of Ontario where the dry weather is having serious effect.

Examine your harvest machinery thoroughly so as to have no delay in the harvest. Have the twine ready and duplicate of any parts of the machinery which are likely to go.

ATTEND THE EXHIBITION CAR.

During July the special exhibition car will stop at several Saskatchewan points

ake it a point to go to the nearest one d get a little of their inspiration. Dur- the week of July 13-18 the train will ver the line from Wynyard to Foam ke and will also run over the Pheasant lls branch between Lanigan and Bul- a, and over the Colonsay branch be- een Craven and Colonsay. The train sists of ten or more cars and many ding agriculturists accompany it. It ll be a real treat for every farmer who n hear them.

GET ONE.

One of the most convenient little tools t can be added to a farm equipment is rivetter and a box of brass rivets.

WITH THE HOUSEKEEPER.

The farm housekeeper frequently has tra work to do during the harvest sea- n so any saving of labor is a real econo- y. The cooking, washing, and ironing y be made easier without disturbing e comfort of the household, either. A o-burner oil stove costs very little, and used only for cooking supper, leaves e kitchen cool all afternoon. The wash- g is always heavier in warm weather, t the ironing should be cut down to a nimum. Everyday towels, sheets and derwear are really softer if left un-

A typical Holstein in an Ontario herd.

oned, and in buying summer dresses if tton crepe is chosen the laundering is mple indeed.

The fireless cooker has its greatest pularity during the midsummer onths, not only because it makes it un- cessary to keep the kitchen fire going, t it helps with the actual work as well. ce put to cook the food requires no re attention.

IN THE FLOWER GARDEN.

Many of the late blooming flowers, espe- ally asters, are in danger now from root his. Watering the soil with tobacco ter will help keep the pests away.

For a succession of bloom, plant some adioli this month. Dwarf nasturtiums y also be planted in shady places to ke the place of the annuals that bloom rly.

WATCH THE HOUSE INSECTS.

Do not feel sure that your carpet is eed from moths because you use the cuum cleaner regularly. Eggs may be id underneath even when the carpet is ving hard wear and being cleaned fre- ently. If it is turned over, however, and e cleaner used even the eggs will be re- oved.

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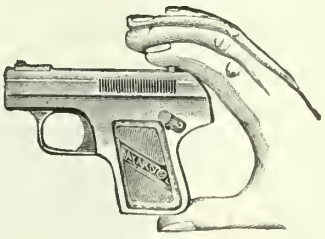

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Grandfather and the farm boy gathering the stones from the summer fallow, preparatory for wheat.

The house-fly, the worst of summer pests should be prevented by screening of windows, doors, and stable manure unless this is spread on the land immediately. Any decaying matter is almost sure to have eggs in it and should be sprinkled with lime. Where flies have gotten into a room the most thorough means of eradication is to fumigate with a teaspoon of pyrethum powder burned on smouldering coals. Keep the room closed for an hour or two then gather up and destroy the flies.

CANNING SMALL FRUITS.

The berry season isa busy one for the farm housewife, but where the fruit is canned whole retaining its natural shape and color as well as the flavor, the result pays for the labor many times over. This is easily done by putting the prepared fruit into thoroughly washed jars, covering with boiling syrup, putting on the tops without rubbers and cooking the fruit by setting the jars steamer, or on a folded towel or trivet in tepid water which is then heated to boiling point and kept there till the fruit is cooked. Dip the rubbers in boiling water, fill the jars to overflowing with boiling syrup and seal.

To can small fruits raw, put the prepared fruit into sterilized jars, cover with boiling syrup, screw on the tops and set the cans in a tub. Fll the tub with boiling water, cover with a heavy blanket and leave until the water cools.

THE FLOWER GARDEN.

This month is an excellent time to sow perennials and biennial flower seeds for next summer's bloom. Nearly all the hardy flowers can be started in this way, protected through the winter with a light mulch and transplanted to permanent places in the spring. The columbine, fox glove, hardy larkspur, canterbury bells, pinks and Sweet William will do well, planted in this way making a delightful old-fashioned border for the farm lawn.

VEGETABLE BLIGHTS AND BUGS.

For bean rust, potato rot and blight, fungous troubles of melons, cucumbers, tomatoes, etc., spray with Bordeaux-arsenate of lead mixture.

A simple remedy for cabbage worm is to sprinkle cayenne pepper over the plants. This is safe and effective.

IN THE POULTRY YARD.

Do not lose sight of the fact that lice flourish in filth. Keep the place clean, and disinfect with whitewash and frequent dustings of hardwood ashes.

Remember too that this is the busy month for rats and weasels.

Dispose of whatever old stock you do not intend to carry over, before they begin to moult.

Separate the cockerels from the pullets and give the former some extra feeding.

Cut flowers on the farm tables are within the reach of all.

Eggs should be kept in a cool cellar, but not near vegetables or other matter having a noticeable odor.

SIMPLE REMEDIES.

Cod-liver oil is good for fowls light in condition, and also for those lagging in the moult.

Caster-oil is useful in cases of diarrhoea. A dose will relieve the intestines of irritant matter, the cause of the trouble, and cool and clean the bowls.

Olive-oil is also good in many cases of looseness of the bowls, and should follow the dose of castor-oil. Olive oil is useful in cases of egg binding and enlarged crops, and for dressing the combs of fowls to prevent frost bites.

Camphorated oil is good in cases of cramp caused through running on damp ground. With half an ounce of camphorated oil should be mixed a teaspoonful of turpentine; thus a good embrocation for rubbing into cramped legs will be on hand.

Coal oil is a good remedy for scaly legs, if well applied daily to the affected parts. When the scaly matter is removed, the legs should be well washed, dried and rubbed with vaseline.

Vaseline is useful to apply to sores, and to combs and to other affected parts of fowl that have been treated for "white comb." For the latter ailment the vaseline is best applied in a carbolized form.

Spirits of camphor is good for coughs or rattling in the throat, as is also ammoniated quinine. A few drops to a little water should be given three or four times daily to ailing birds.

Tincture of iron added to the drinking water will tone up the system of fowls that have recovered from sickness or that have become run down through much laying.

Tincture of arnica is useful for painting the parts covering the lungs of fowls suffering from inflammation of the respiratory organs, as also is tincture of iodine.

Flower of sulphur added to the mash food of fowls occasionally in warm weather will purify the blood. It is also useful in cases of slow feathering in chickens, and the latter may have a sprinkling added to the soft food occasionally.

Epsom salts should also be on hand. It is the poultrykeeper's friend in cases of indigestion and overfatness in the stock. All fowls may with safety have a dose of the salts weekly. It may either be dissolved in the drinking water or mixed in the mash food.

BEES.

The clover blossoms will cease to yield about the middle of the month, and it is a great mistake to leave the early white honey in the hives until after the fall flow. The bees will mix it with the dark

A view of Mr. Tregillas' dairy herd at Calgary.

fall honey destroying the delicate flavor and materially lowering the price. Removing the surplus honey now will also give the colonies additional room and prevent a prolific cause of swarming.

In taking the comb honey sections from the hives, the use of a bee-escape board is necessary, as it does away with smoking the bees out of the section supers, which always results in many cells being uncapped. A bee-escape board can be bought cheaply at any bee-supply house. It permits the bees to go down into the brood nest after they have finished their work in the supers, but prevents their returning. Toward evening gently lift the supers containing the sections and slip one of these boards between the entire lot of supers and the hive body, and in the morning practically every bee will be out of the supers. They can then be taken off, the honey stored and the supers returned with other sections in them for the later flow from goldenrod, buckwheat, etc.

Comb-honey should be stored in a warm place, never in a cellar or ice box, but preferably in a warm attic away from robber bees and bee moths.

In extracting, a heated knife cuts the caps better than one that is cold, and prevents needless tearing of the cells and combs. All cappings and brace combs should be saved. The wax thus secured means a considerable item of profit in a season.

A DOMINION MAPLE SUGAR DAY.

Fitting indeed for the national birthday of Canada is the educational campaign that is being waged on that day by the Quebec maple sugar producers. The healthy fight that is being put up by farmers and others interested in the preservation of pure maple food products is bearing fruit in statute revision and in the public tastes.

On July 1st every patron of a railroad dining-car and of the steamship lines and of the largest hotels in Canada will be given a sample of maple sugar from the Quebec Association. There will also be a goodly number sent to England and France.

Farmers in Eastern Ontario have not been able to place their goods in the markets that they deserved and there is a possibility that a similar co-operative agricultural society as existing in Quebec will soon be organized. At any rate the move for pure maple syrup and maple sugar on Canada's birthday is a most appropriate one and should stimulate a necessity in all lovers of this country for the purity of all food products and the proper labeling of all compounds issued for public consumption.

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FARMER'S MAGAZINE

143-149 UNIVERSITY AVENUE, TORONTO

Is the Private Trader Passing?

By J. R. BLACK

THE question is often asked, "Is the private trader passing?" Is he to become like so many other institutions which had recognized places in the country, years ago, but, which have passed away, their places being taken by other and more acceptable substitutes? This has been the case with the stage coach. It has been displaced by the steam and electric railways for long distance transportation, and to find modern representatives one has to go to some out-of-the-way place, where the stage is still in use for a short distance. Now it is argued that the small trader will suffer a similar fate. And in proof of the coming fulfilment of this forecast, it is pointed out that there are thousands of shops, now closed, which once did a profitable trade. These closed shops are found in the open country, in villages and towns. Forty, even twenty-five years ago, every ordinarily well-settled district had its store. In it were kept such lines of goods as were in demand by country people leading the simple life. Here the people came and got their supplies as needed. Money was scarce and much of the trading had to be done in the way of barter. The farmers brought to the storekeeper in exchange for his goods, butter and eggs, wool, home-knitted socks, potatoes, pork, cordwood, and shingles. But to-day you may pass over an entire county and not see a single representative of one of these country stores.

The village store has also been a vanishing factor. Village after village, in each of which were several shops, have either seen all close their doors, or have had the number greatly reduced; while those which remain are only the mere semblance of their predecessors. In a small town in Ontario forty years ago there were two mercantile establishments, each doing a yearly trade amounting to $120,000. This was not all the business done, as there were a number of small stores, but it is more than is now done by all the traders in the place. There were, in addition, seven tailor shops employing from three to ten hands; now there is only one where one man and two women do all the work. This shrinkage in the volume of trade is not owing to any lessened demand for goods by the people of the surrounding country. For while the population has numerically decreased, it has a greatly increased purchasing power, and actually consumes more supplies for their persons, tables, and in the furnishing of their homes, than the greater number in the district who led the more simple life.

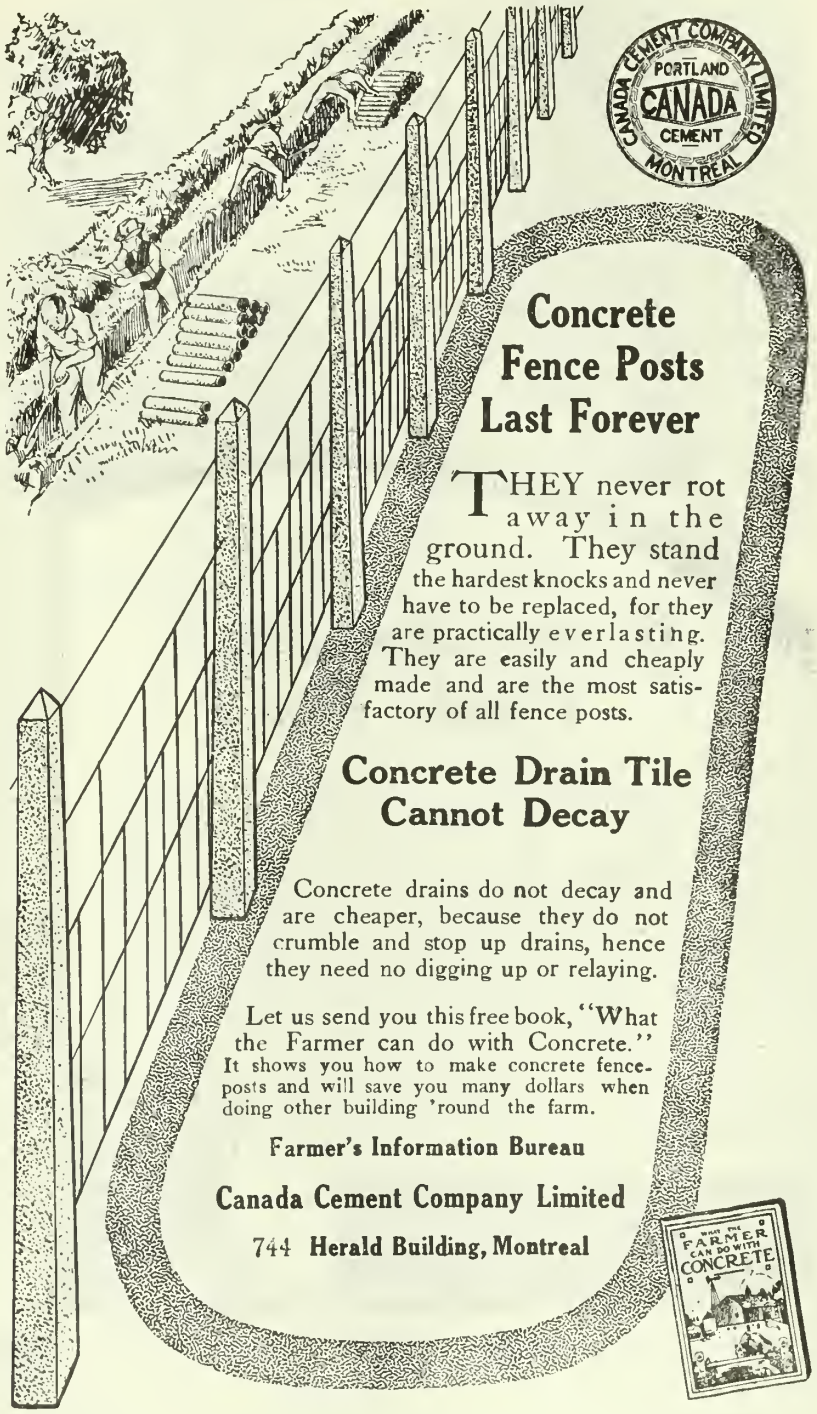
Within fifty miles of every large centre of population, the towns are, for the most part, either stagnant or retrograde. The exceptions are where manufacturing establishments have been located, whose operation has resulted in the retention

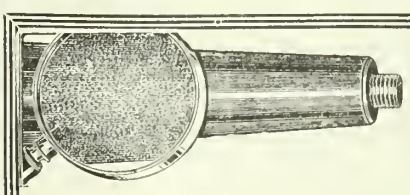
of a proportion of the natural increase, and in the advent of some from outside.

This depletion in the number of retail shops is mainly due to the presence and operation of large retail establishments. These are now located in nearly all the populous centres of the Dominion. They control many millions of dollars as capital, and do an immense business yearly. The volume of trade done by one of these, yearly, is placed at $50,000,000, and of a second at $25,000,000. These multiple shops extend their operations into several departments of trade. Within their capacious walls may be had any article comprehended under the head of general merchandise, drugs, produce, and men's clothing. Of these goods not less than $150,000,000 worth is annually distributed among their widely scattered constituents.

There are those who believe that the multiple shop has not only come to stay. They believe that it is destined to assume larger proportions in future. In support of this view, it is alleged that the managers of the big concerns are able to buy on a large scale, and, on some lines, can save the profit of the jobber or middleman. This profit they can share with their customers, and hence sell goods cheaper. Strangers shopping in the city prefer the big shops where the selling prices are necessarily definite, and in plain figures. By this arrangement a sense of security is given that they shall be fairly dealt with. Then the larger the stock of goods, the greater is the variety afforded, and the less likelihood of any article of dress being duplicated by others in proximity to the wearer. The mail order department can be run only in connection with big firms, and by this means a large number, who live at a distance from the point of distribution are enabled to do their trading. It is also maintained that the greater the volume of business done under one management, the smaller is the proportionate cost of handling the goods.

On the other hand there are those who seem equally convinced that the day of the private trader is by no means past. The basis on which this conviction rests was, perhaps, fairly set forth by the secretary of a large group of retail merchants. He said, when asked as to the future of the smaller capitalist in trade: "I do not see that the private retail shopkeeper has anything to fear from the large capitalistic organizations now in the retail field. What are the facts as to the capital employed and the business done by the multiple stores and the privately-owned concerns? And first, let us get before our minds the case as regards the private traders. The number of the latter in all Canada is, say, 40,000; and allowing to each an average capital of $2,500, we have a total of $100,000,000. But this is turned over, at least, twice a year, and thus we have a working capital of $200,000,000. Over against these figures let us set the capital of the big firms. This, I admit, is difficult to estimate, as the law does not require its publicity, except in the case of a company whose stock is placed on the market; but they may be fairly credited with $20,000,000 working capital. Hence





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as regards the capital invested, the associated capitalist concerns do not bulk large in the presence of the capital employed by the privately-owned shops.

"Regarding the volume of business done, a fair estimate for both the multiple shops and those individually-owned will show that the latter are as far in advance of the former that little alarm is justifiable as to the supplanting of the lesser by the greater in size. If we estimate the aggregate business done by the scattered capitalist organizations at $150,000,000 a year, we will not be far astray. Yet this amount, large as it seems, will appear small when placed alongside of the yearly volume of business done by the total number of private traders, which must reach somewhere in the neighborhood of $500,000,000.

"There are several factors at work in connection with the small shop which are absent in the big one. One of these is the ease with which goods may be personally inspected by the customer. In a large warehouse with a number of departments, it is difficult to locate the section where the desired goods are. But in a small shop you can generally see, on entering, where they are located, and a few steps brings you to the counter where they can be examined. Besides it is to some people a matter of interest to meet the proprietor. This, however, is next to impossible in the big, multiple shop.

"The community itself," he went on, "has a special interest in the continuation of the private store. Its owner is generally a man who is of service to the people of his locality in many ways. He is often the best qualified citizen to serve on municipal councils and school boards. If any enterprise is set on foot for the public advantage the local trader may be counted on to encourage it. The church, too, will be benefited by him. He is generally a liberal contributor to its funds, and a regular attendant on its services."

THE BIG GAME OF BRITISH EAST AFRICA.

Outside of the three preserves of the colony, the big game of British East Africa is rapidly vanishing, and, according to W. T. Hornaday, "is absolutely certain to disappear in about one-fourth the time that it took South Africa to accomplish the same result." Hornaday points out that the present legal bag limit is ruinously extravagant; for $250 any man may buy the right to kill 300 head of hoofed and horned animals of 44 species, not counting carnivorous animals that may also be killed. Thus the richest big-game fauna of any one spot in the world, which nature has been several million years in developing and placing there, seems likely to be wiped out by man within the next fifteen years.

THE romance of the modern farm is one of the most engaging stories of modern development. The telephone, rural mail delivery, and machinery of almost human ingenuity, have lightened the task,—but no one has yet found a way to make the rigors of life in the open less dangerous. Exposure to cold, wind and rain while driving to market, attending to the stock in all weathers, working in damp places, or over-strain in harvest time, often result in sore and inflamed muscles, unfitting one for the duties which must be carried out. The pain and soreness persists and ordinary household methods of relief are unavailing. There is danger of the ailment becoming chronic. Many cases of troublesome rheumatism can be traced to these simple things, so easily dealt with at the start when you use the right remedy. Dr. Thomas' Eclectric Oil, well rubbed in, acts like magic, in dispelling pain of this nature from any part of the body. It is remarkably effective for muscular rheumatism. It penetrates right to the inner seat of the trouble. The muscles become pliant without loss of strength by its use. Here is the simplest and least expensive of effective remedies. You cannot afford to be without it for a day, for you never know the minute you may need it. Have it ready. Save needless pain. Write Dr. Thomas' Eclectric Oil into your list of purchases next time you go to the store. It is known everywhere, used everywhere, sold everywhere. A day's work saved by your foresight in having Dr. Thomas' Eclectric Oil always ready would pay you for its cost many times over. Never will you need it more than during the cold winter—get it now. Price 25 cents per bottle.

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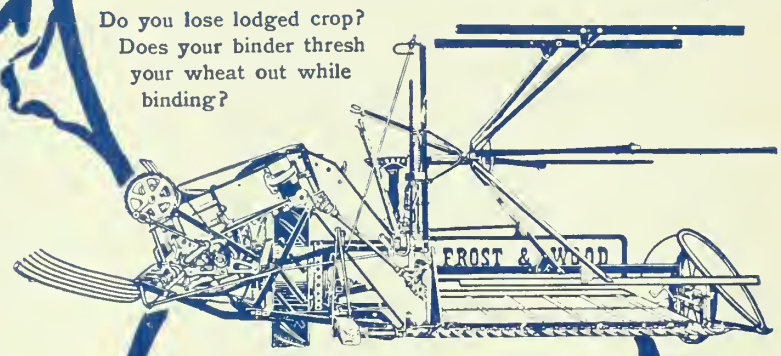

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The more you try other kinds, the better you will understand why Williams' Shaving Soaps are so popular.

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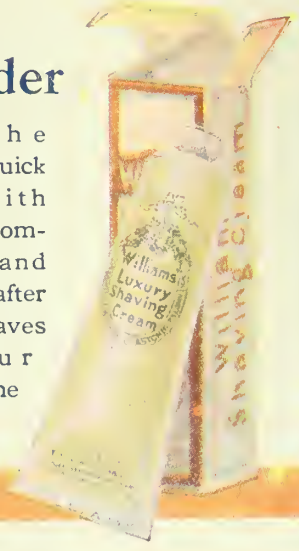
For the double quick shave with the same comfortable and refreshed after effect. Leaves all your time for the razor.



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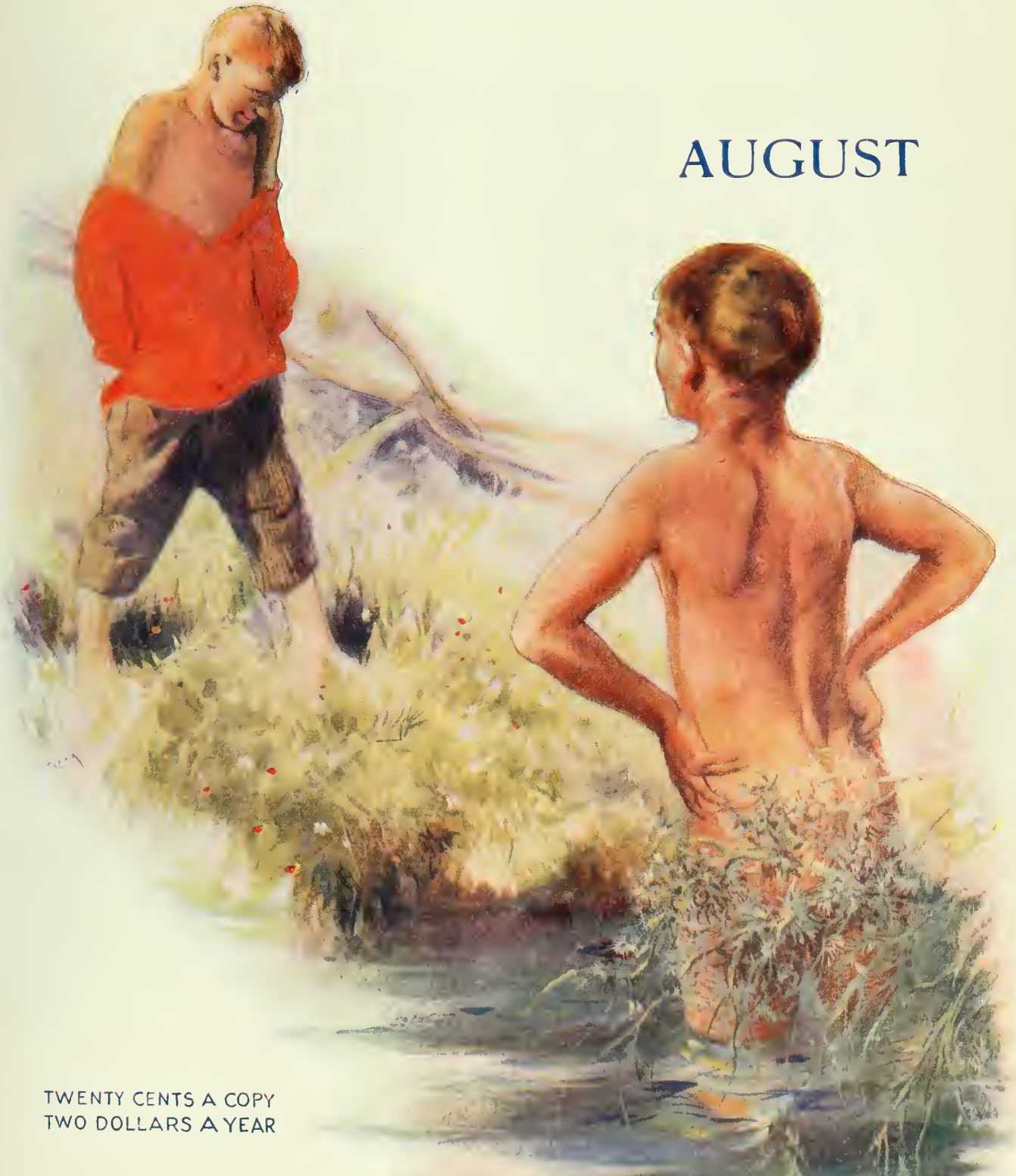
THE FARMER'S MAGAZINE

AUGUST



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(Fits any machine.)

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FARMER'S MAGAZINE

JOHN BAYNE MACLEAN, President
JOSEPH McGOEY, B.A., Manager
MILLER McKNIGHT, Adv. Manager

AUGUST, 1914

F. M. CHAPMAN, B.A., Man. Editor
ETHEL M. CHAPMAN, Assoc. Editor
J. I. CODDINGTON, Ph.B., Cir. Manager

MAGAZINE MOVEMENTS

A Word or Two of Interest to Lovers of Farmer's Magazine

Editorial representatives of Farmer's Magazine are making special visits to the Maritime provinces on the one hand and to the Western provinces on the other. Their inquiries and researches will become the property of our readers in the coming autumn issues.

The one big feature of Farmer's Magazine work is its service to the farmers of Canada. The ideas behind all these well illustrated and high class magazine articles, are those of helpfulness and inspiration.

And an idea is a powerful influence in making material things assist us in our marching on. The place of agriculture in Canada is a worthy one. To be a good farmer means much to citizenship. And by dignifying our calling and ennobling it on our library tables, is shaping ends in no unmistakable way. That is why we have such faith in the work of "Farmer's."

A few extracts from recent letters are certainly encouraging:—

—"you are without exception getting out the best magazine in Canada."—A Western Ontario Reader.

"I have received more help from the articles in Farmer's Magazine than from any other literary source."—An Okanagan, B.C., Reader.

—"We have been reading a very interesting article in the Farmer's Magazine of Toronto which speaks of co-operation as the farmer's new 'hired girl'—we never read such journals as this one without feeling that life on the land can be made the most attractive of all adventures."—Editorial from The Irish Homestead.

—"I am much pleased with the Farmer's Magazine. It is one of the best edited and most attractive of the more than 50 livestock and farm publications I receive."—An American Reader.

The September issue has an especially attractive contents page. It is the beginning of the autumn months when harvest joys and ingathering days bring their own peculiar charm. A new contributor, clever, charming and original makes his appearance on the FENCE PROBLEM. We want every farmer who has ever set an anchor post to brace himself for this description.

Dairying in Nova Scotia, a thorough, bright, well-illustrated article showing plans of the writer's own dairy barn will be a feature of special interest to farmers throughout the Dominion. This article is full of practical ideas based on science and experience.

$1,200 From Bees On a Mixed Farm. The fact of the honey crop being light this summer only promises a better market next year, and in this story from a farm where bees are kept as a side-line, there is a wealth of inspiration and entertainment for the bee-lover.

The Building Articles will be of special interest this month. The Farmer's Magazine is glad to reply to letters from its readers, regarding house plans, lighting, heating and sanitary appliances, and remodelling old houses. Many other cleverly written, well-illustrated articles are being prepared for this issue.

The Service Department in Women's Institute work and in Farmer's Institute work will be at your disposal. Tell your neighbors of the magazine. You can help us greatly that way. The more readers the better the magazine grows.

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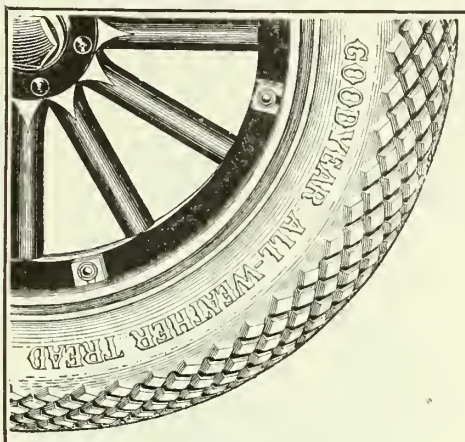

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Fourth, our All-Weather tread—our double-thick, resistless anti-skid, yet as flat and smooth running as a plain tread.

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FOR SALE BY ALL DEALERS

Fifty Acres of Quality Fruit

The homestead is a beautiful spot with big lawns, trees and shrubbery, and one of the homiest homes in Canada.

While a farm like this requires hard work and close attention, Mr. Johnson knows how to relax when off duty.

The evaporator, showing gangway to storage house.

The Johnson Bros.' Farm Near Forest Employs Sixty Hands, Runs Its Own Evaporator and Ships Only Box-packed Fancy Goods

By ETHEL M. CHAPMAN

A visit to the Johnson Bros. farm shows one of the most pleasing demonstrations in up-to-date methods of orcharding and caring for the ripened fruit to be found in America. It is a practical paying plant, where labor or expense have not been spared to keep every department up to a standard. The provision for cultivating, spraying, and the working arrangement in the packing house and evaporator have been planned with a far-seeing eye to efficiency and quality. It means something to Canadian fruit growers to know that the Dominion Fruit Commissioner has proved the value of these on his own place.

ONE hundred acres in the heart of the woods and a Scotchman's thrift and vision—these were the beginnings of the Johnson Bros.' fruit farm near Forest, Ont., one of the fairest orchards that ever faced the sun.

When their father, James Johnson, bought the land sixty-five years ago, its apparent assets were seven acres of clearing, an Indian trail running along the lake short to Sarnia for transportation purposes, and one hundred small apple trees, some of which are still standing and bearing well. But the agricultural prospector saw silver veins in the clay.

The situation is no farther north than the old fruit district of Niagara, but is claimed to be less liable to low temperatures on account of the lake lying to the north instead of to the south. The orchard slopes gradually toward the lake, facing north-west, a condition which retards the early development of blossoms and so saves the crop from the danger of spring frosts. With the tempering influence of the water the fruit on the flats is never injured by summer frosts, while it requires no provision more than leaving a natural windbreak when the land was cleared to protect the trees from winds off the lake. Moreover, the soil, a mixed sandy loam and clay loam is ideal for apples and peaches.

So it is no wonder the Johnsons became a family of orchardists, nor that realizing the possibilities of the apple trade they should put forth untiring efforts to work up and improve the industry in Western Ontario. Also, it follows naturally that a man of D. H. Johnson's wide influence and practical experience should be chosen Fruit Commissioner for the Dominion, and that he should take a second look at the home plant before climbing down from his spraying machine to go to Ottawa.

Another feature of the pride of the Lakeside farm.

The farm has fifty acres of orchard, twenty-three acres being given to apples, seventeen to peaches, and ten to plums. Apple fillers are planted with the peaches. The natural life of a peach tree being about fifteen years while an apple tree requires nearly eight years before valuable bearing begins, this method leaves a good apple orchard when the peaches die out. Labor is not spared in pruning, spraying and cultivating. Most of the pruning is done during the winter when the other work is least pressing. The young peach orchards, especially are cultivated extensively in the early summer while growth is going on; then a cover crop is put in to check growth and prevent winter killing, to protect the roots and to add humus for next season's fertilization.

The spraying of this orchard keeps four men with two power outfits busy for about one month every season; and there are not so many enemies in the air as fruit-growers in older districts have to contend with. The San Jose scale has not come this far north yet, but the coddling moth and spot have to be watched. The leaf curl on the peach trees, for which only one spraying is necessary just before the leaves come out, and the plum curculio

A view of orchard showing cultivated soil and the natural windbreak protection along the lake.

are the only other pests that give any trouble. Lime sulphur, and lime sulphur with arsenate of lead for the apple pests, are the only chemicals used, and these are mixed on the farm—a practice which would scarcely be worth the time and equipment for a small orchard. The arrangement here is very convenient, however. In a rather steep bank at one side of the orchard a cement tank (capacity four thousand gallons) is fed from an under drain. From the tank the water is piped to a lower level where the materials are mixed and the spray-motor tanks filled. The lime and sulphur are boiled in a home-made device consisting of a wooden box with an iron bottom, set over a fire-pit.

From the time the picking season begins until the last of the fruit is shipped a visitor would scarcely know whether the Johnson orchard was a modern Eden or an Italian beehive. Sixty hands are employed steadily for about two months—mostly men and girls from the neighboring towns and some Indians from the Reserve near by. The wages are good and the Johnsons have never had any difficulty in getting all the help they want. All the apple picking is done by men; the girls sometimes pick peaches from low trees. The telephone is brought out to the orchard and orders taken right from under the trees so the fruit is picked, packed and sold on the spot. The peaches and plums are all packed by white girls, the peaches being handled separately and laid in tiers in the baskets. Last year 10,000 baskets of plums and 12,000 baskets of peaches were shipped to different parts of Ontario and the West.

But the foundation of the farm is the apple industry. Twenty-five hundred trees, all standard winter varieties and all bearing the maximum yield of clean first-grade fruit means some work; for practically the whole crop is fancy stuff and put up accordingly. The apples are wrapped in paper and packed in boxes. The Johnson Bros. are pioneers in box-packing in Ontario and the venture has been exceptionally well received. It might rather be said that in a short time everything else will be forced out of the market. Practically all the crop is shipped West and the Western purchaser demands apples packed in boxes. They are easier to carry and store, less liable to decay before they are used, and perhaps the buyer feels the cost less in small but frequent outlays. The American and British Columbia packers are supplying this

D. Johnson, Dominion Fruit Commissioner, who left the farm a few months ago to go to Ottawa.

demand and so even the superior Ontario fruit put up in barrels stands a poor chance on a Western market.

The Ontario grower has generally been afraid to venture far into the box-packing system. "It is too slow," or, "he may be held up for help," or "hauling barrels is bad enough, but a load of little boxes!" The wrapping and packing in the Johnson Bros.' orchard is all done by white girls. The average girl's work seldom goes below fifty or sixty boxes a day and one girl made a record of eighty-one boxes. To overcome the transportation problem the ready-cut material is bought in shooks and the boxes put together in a cooper shop on the farm. From the time the picking season begins two teams are kept going on the road from the packing house to the railway, so there is no perceptible slowness about the process.

When the apples are picked they are carefully sorted and graded. Only the very best are shipped out. An evaporator on the farm takes care of the rest. This is a clean orchard, receiving every up-to-date care, and the Johnsons have proved that while preventing any waste from the year's crop an evaporator can turn out a product just as good for cooking purposes as green apples. Water is evaporated until a bushel is reduced to fill a six-pound package; that is all. There is no difficulty in keeping a large evaporator plant running constantly throughout the entire season as the neighbors are glad to bring in their evaporating stock. This makes it possible to take care of the fruit while it is in the best condition; in fact most of the drying apples go into the evaporator the day they are picked.

The evaporator is a new building of cement blocks—the blocks like almost everything else used in the business were made on the farm. From the beginning of the picking season until the last apple is packed it runs day and night. The storage bins open to a driveway, and from the bins the apples are carried in boxes to the paring machines. Eight hand-machines with two girls, an operator, and a trimmer to each; a bleacher and two power slicers are kept busy all the time. To economize on fuel the smoke pipe of the furnace runs across under the drying kilns before leaving the building. Last year one hundred tons of coke were burned to heat the three kilns and the workroom.

The first principle in running the plant is cleanliness. Dirt cannot lodge in the smooth cement walls, the machines are washed twice a day, and the slicers, tables and floor of the operating room cleaned regularly. The slat floor of the kiln is kept scrubbed white and every precaution taken to protect the apples from smoke, ashes, or coal dust. When the dried rings are boxed — and the boxes always

Continued on page 81.

You will find here a city-bred woman making a life worth while of farming and liking it.

The Country Store and the Farm

Progressive Merchants, Seeing the Changed Conditions of Rural Life, Co-operate with the Farmers to their Mutual Good

By WALTER B. PERRY

There are no two sections of our rural population who have more in common than the farmer and the merchant. They both prosper when crops are good and both suffer alike in depression. Too often, though, there has been developed an antagonism between them, that has driven the farmer's business to the city and left the merchant distrustful and dissatisfied with the farmer. The fault has been on both sides.

There is no reason why both should not co-operate harmoniously. Both get their living in the country. Both hope to build up a prosperous rural Canada, and favor the employment at home of the surplus funds that accumulate in the course of production. The writer of this article has given conditions as he has found them not as they ought to be, and the hopes that he expresses should be the real value of the article. Farmers and local merchants can be of great service to one another, in making rural life richer and more attractive.

"DON'T you ever believe it," said Uncle Phil. "Yes, I know that you hear a great deal about the iniquity of the middle man and all that, but don't you ever delude yourself with the idea that they, of our particular trade, are developing the Rockefeller habit. In spite of the more complicated wants of this generation with its higher standard and cost of living, the country storekeeper is more acquainted with grief than he was when your father was a boy."

"And I know; for I have been on the job, boy and man, for the greater part of the allotted life span."

I studied the face of the old merchant. He was my father's brother and had been "old Uncle Phil" to us lads long before I can remember. As a young man he had entered the employ of the pioneer general merchant of these parts and later he had married the daughter and inherited the stand. He was an enthusiastic young man, and believed in his business, his village and the whole township. Farmers were his customers largely. They were his father's neighbors and friends and storekeeping was to him only one way of aiding the great industry of agriculture.

So Uncle Phil's words now came with more weight to me, a young graduate of the Agricultural College. He had seen and lived through the transition stage. He had seen the days of the local industries and also their passing.

The growth of the mail order houses and the rise of a newer agriculture are also under his observation, so naturally I listened to him with more than ordinary interest.

But like many rural institutions the general store has had its ups and downs during the last twenty years. The country storekeeper is not as prosperous as he was when the province was younger. Big business has encroached upon his territory, trade is poorer, credit conditions are more unsatisfactory and failures have become more prevalent.

"It is simply an example of the big fish swallowing the smaller ones—and the community suffers with us. Don't lose sight of that. Perhaps we are not as efficient as we might be, but we're sitting up nights thinking about it. And the credit system! Well, I suppose a cash business could and should be managed successfully, and I've seen a goodly number fail in the attempt."

A general store in Glengarry County, ready to supply the wants of the community from lanterns to fur overcoats.

Such is the evidence of practically every storekeeper interviewed. It may not be wholly true and it may not be the result of scientific study, but it expresses the sincere views given over the counters of rural Ontario, by the men on the job who have watched their business grow smaller with the increase of years.

IN THE EARLY DAYS.

"When I came to this little burgh twenty-five years ago it was a village in the wilderness. The forest almost completely surrounded it. A combined saw and flour mill was located here that employed eighteen men, two shoe-shops flourished, two blacksmith shops were doing a roaring business, a carriage-maker was busy all the time, two hotels were going full blast, while we had in connection with our store a tailor, a milliner and a dressmaker. The gravel road out there was the artery of commerce for three counties. In short, this was a mighty busy little village, houses were at a premium and practically all our wants were supplied by ourselves.

"In those days the country store was the headquarters for supplies of every nature. All the groceries, clothing, household furniture and almost all the articles used about the farms were secured through us. Farmers used to leave a list at the store when hauling their produce out to Ingersoll and would call in for the goods upon the return trip. The village was practically self-sufficing.

"Nor did our usefulness end there. We were really the bankers of the community. We carried the boys over slim seasons and poor prices. They paid us when they could—and some haven't paid us yet; but we never turned a man away unless he was a deadbeat just because he hadn't any immediate cash in prospect. Then we were always among the first to contribute to every public work. We helped to lay down the sidewalks and to build the new churches. When the lads at school wanted a football we helped them out. If a

The egg wagon makes its rounds—five trips weekly.

poor family needed assistance we were called upon first. And we did this not so much because it was good business policy to be generous—which it was—but because we were a part of the community and we had faith in it and in the people. Moreover, the profits we made went into the business or were invested at home—we kept it where it did the most good. Altogether, we were recognized to be something more than a selling agency—we were a rural institution.

"Look around you now. Over there the cattle are grazing upon the site of the old mill. A stranger wouldn't know it ever had existed. The shoe-shops burned down and were never re-built. The carriage business has been dead for years. The hotels closed years ago and our milliner, tailor and dressmaker left in the nineties. Even the old highway isn't the thing it was; the railroad has been doing its work these many years.

"Now mark you I am not registering a kick against this modern tendency. We would not revive the old scheme of things if we could. Modern progress and modern machinery have given this district a wonderful stimulus. Farmers are more prosperous than ever before, and the change has not been an evil, unmixed, for us. But our scope has been narrowed and the young fellows just starting out in business must realize this, and that it is a waste of energy to attempt to resurrect a dead form of trade."

"Now all this goes to show that the country storekeeper must conduct his business differently than did his fathers. He must become specialized even as the age is specialized. If he is not to retain his old time position in the community, he must first of all ascertain just what economic forces are for and against him and then must follow the path of least resistance.

KEEPING MONEY AT HOME.

And the viewpoint of agriculture is also changing. Farmers are beginning to realize that the sending of their money out of their locality goes to build up the big centers at their expense. Whereas the increasing of the business of their local merchant means many things to them. It encourages him to stock with the goods they need. It makes the village more prosperous. This in turn attracts other residents, and makes a bigger local demand for farm products. Besides, the increased business in the village makes the farmer's farm more valuable. The women's Institutes are bringing the wives of farmers and storekeepers closer together in the uplift movement. There are scores of examples all over Ontario where the local stores are working up to the advantages of farm trade and are using the telephone, the rural mail delivery and the auto to reach his business, and the farmers in return are turning their business his way. It is all for the good of the rural and small town uplift. And when you lift up the rural life, you elevate the national life.

"The specialization of the age isn't an evil, unmixed, for the country tradesman," continued Uncle Phil, "and I'll tell you why:

"In the first place it has greatly increased our consumers' wants, and in the second place it has revolutionized conditions in the home. Once upon a time the housewife made practically all such clothing as shirts, overalls, mittens, house dresses, etc., and she cooked or preserved about all the food consumed by the household. She was a mighty busy woman in those days. I can tell you. Then, too, the farmer killed his own meat, often had his own wheat ground, and in many ways was more nearly self-sufficing than he is to-day.

"Now all this is changed, not only are those commodities purchased, but the demand has increased very largely for sugar, tea, foreign fruit, oatmeal, breakfast foods, and canned stuffs of all kinds. As a result the grocery business has increased enormously. It is stronger now than it has ever been, and owing to the bulky and semi-perishable nature of most of the goods it is handled almost entirely through the local dealer.

"The staples in drygoods—shirts, overalls, wash goods, prints, etc., have increased to the same extent and for the same reasons. Boots and shoes are handled to a greater extent also, while such materials as paints and oils are on the up-grade.

"Our egg trade is developing as the farmers develop and this means cash for us. We exchange them for goods and while we make profit only on these, yet it increases our trade to that extent. Besides we sell the eggs for cash each week and that helps wonderfully in seasons when money is short. The egg trade can be improved wonderfully and it offers opportunities for the man who can look ahead. Although the old speckled hen is one of the brightest features of the trade, the egg circles are helping the farmers to get better prices and it is cutting out the merchant's losses on bad eggs.

"With these various lines to work upon and with a richer farming community behind us than ever before, the situation is not without some promise. It is just up to the younger generation to get into the game and to develop those lines that permit of development," said Uncle Phil.

THE CREDIT SYSTEMS.

"The credit system has become second nature to the farmer," said Uncle Phil when I approached him on the subject. "In this district it is quite unnecessary, so I can only attribute it to habit. The farmers receive their money quite regularly and are generally as able to pay for a thing when they buy it as they will ever be. They have grown accustomed to keeping all the real money they have until the last minute. The pioneer habit of holding what little cash there was, has fastened itself upon them and they can't get quite out of it.

"This credit habit is bad in two ways. In the first place it leads to bad debts, of which I have had as many as ten per cent. In the second place the merchant is really loaning capital without receiving dividends for which he has to pay interest. That system is enough to break any business. And it isn't always the fellow without the money who is the worst actor. The renters and hired men are usually the poorest risks, of course, but they are recognized to be such and are watched. It is the fellow with money in the bank who won't pry himself loose from some until he has to, that is the most difficult to handle. Many prosperous farmers consider one settlement a year quite sufficient, while many carry bills for years. Of the total number of customers I have had I am safe, I think, in saying that the majority made about half-yearly settlements.

"Why didn't we introduce a cash system? Well, we did, more than once. But it always fizzled out. We just couldn't keep it somehow. Before we knew it, good reliable customers would have small accounts which would soon grow into large

The survivors. Smithy and one of the better class stores. Stock $6,000 to $12,000.

Old Uncle Philip. Veteran now retired after forty-five years of service.

ones. Then it just naturally seemed to flop into a credit system again, as we couldn't make a distinction between our customers. The trouble was that the credit habit had grown to be a second nature to the consumers—and I think we had become so accustomed to it that it seemed natural to us too.

HABIT RESPONSIBLE FOR CREDIT SYSTEM.

"You will hear many reasons why a cash system can't be worked. But now that I have retired from the game and can review my life-work, I think, I have given you the essence of it. Habit is responsible. This may not be scientific, but then the rural credit conditions aren't scientific either. I am convinced that they are as harmful to the farmer as they are to the merchant. They lead to extravagant and to useless buying almost always.

"A cash system is the only one, and I am confident that it can be worked—although it would be an up-hill task, I will admit. It should be brought about gradually, however. First, I should have printed slips stating that accounts would be payable at interest after a stipulated length of time. I should render bills at least quarterly, at first, gradually working to a monthly plan—which would be as satisfactory as cash.

"As the business is run now the storekeeper loses his own bad debts. He sells on a cash basis, contrary to general belief. If all sales were good he would clear from twenty per cent. upward on his goods, but as it is he is fortunate to show a profit, of fifteen per cent. and more often it is twelve or ten. Now if a cash business were established, the sales could be conducted at a smaller margin to the mutual profit of both consumer and tradesmen. It looks to me like a pretty good thing for a farmers' and merchants' club or co-operative society to work with."

CO-OPERATE WITH STORES.

The co-operative store, owned and managed by consumers, is no new thing. It has been handled successfully in some lands but not in rural Ontario. It would be a premature and at best a risky venture now. Before we can have a truly co-operative store we must have a spirit of co-operation, and that does not seem to exist in most districts.

Again, an organization of tradesmen might be formed, similar to the recently organized Horseshoers' Union. With such an organization a concerted action might be taken to fix a cash system according to varying conditions, without fear of competition by others in the neighborhood. Such an association might be either provincial or local, and would be of the nature of a trade union rather than a monopoly.

But the most effective and the most satisfactory co-operation should come from consumers themselves. If the farmers in a district would combine and make an agreement with the storekeeper to supply goods at cash or thirty-day rates, matters could be adjusted greatly to the benefit of all—only the shock of such a proposal might give the storekeeper a stroke.

Continued on page 81.

Milking by Machinery

Slowly But Surely the Day of the Milkman's Drudgery is Ending in a Triumph for the Mechanical Milker

By HARRIS K. ADAMS

When machinery can fully supplant the hand methods of milking, one of the greatest objections to dairy farming will disappear. As will be seen herewith, the success that is attending the introduction of milking machines in various parts of Canada is very encouraging. Dairying is one of the greatest assets of agricultural operations. There are whole sections of the older provinces where farms would spring into splendid money making plants if they would go in for an up-to-date dairy business. In Oxford county they say that the average returns from dairying give a gross revenue of $100 per acre per year for every farm in that county. Although Oxford is favorably situated, yet the same wealth could be produced in other places if the proper attention were given the business.

DESPITE the dignity that has been added to the "Gentle Art of Milking," by W. D. Albright, in the July issue of FARMER'S MAGAZINE, there remain some very big reasons why a machine, rather than the human digits, should do this "brewing of albu-lactic wealth." So much has been accomplished in the way of machine invention in ridding man of his laborious operations, that no farmer has ever despaired of the day of the successful milking machine.

While some men like milk cows and like to milk, others don't like to milk even though they may, and often do, own thousands of cattle. The old story of the cowboy whose scorn for the cow was such that he preferred to "flavor his coffee with a tin can," rather than draw a few streams of milk from a cow, may be overdrawn, but that cowboy cannot be considered the antithesis of the modern hired man. There is no getting around it, the average hired man, be he from across the seas or "to the manner born," objects to milking cows.

Hundred of tests in the stables of Canada have been made. Milking machines are being perfected to the satisfaction of the dairymen. Many manufacturers are coming to the front with their goods, and it becomes now the realm of possibility for even the small farmer to own a milking machine. It is now simple enough to be operated successfully by a man of only average ability, rapid enough to save the farmer many hours of valuable time and, better still, a machine entirely acceptable to the hired man. Milking has been robbed of its terrors and I can easily imagine the hired man of the near future asking his prospective employer, "Have you a milking machine?" rather than, "Do you milk many cows?" as at present.

Several farms in Canada were recently visited with the aim of securing authentic evidences of the success of the milking machine in operation. We ran across several makes of these machines. Each owner was enthusiastic over his choice and each seemed to be giving satisfaction. In fact the ease and speed of the milking time was a revelation to us and we predict, a headlong desire before long for

the installation of this boon to dairymen.

But many of the average dairymen have already taken the leap and came out on top, their investments secure and a bothersome chore as good as abolished. Many of these men who talk about mechanical milking from experience, live in the great dairy counties of Oxford and Elgin. The farmers of these up-to-date dairy counties do not milk a few cows as a sort of unimportant sideline and thorn in the flesh of the hired man. They go into dairying in a businesslike way. If they could not find a way to get their cows milked the main source of their income would be cut off. The solution of their milking problem is a vital one. They have received the milking machine with open arms. One milking machine agent reported selling over sixty outfits in Oxford County alone.

A row of pure bred Holsteins belonging to W. J. Elgie, with the mechanical milker at work.

One of the dairymen of that district, who strongly advocated mechanical milking is L. H. Lipsit, of Elgin county, and it is no half-hearted praise that Mr. Lipsit bestows on his machine. He has tested it out for two years now and has not found it wanting.

"A man can milk twenty cows an hour all by himself with this machine," said Mr. Lipsit. "I am not talking about the maximum possibilities of the machine; that's what we do, twenty cows an hour every day the machine is in operation. Do you see what this means? It means that I am not absolutely dependent on hired help to get the cows milked. If need be the man with a mechanical milker could cover thirty to forty cows himself."

"How about the cleaning-up process? I have been told that it requires a complete sterilizing apparatus in the stable to keep the machine clean enough to produce good milk."

"We have never had a complaint from the creamery to which we ship," answered Mr. Lipsit. "Our method of washing may appear slovenly to some, but so long as our customers don't kick and we can never smell anything wrong, we are satisfied. I will wash it clean right now to show you how easily it is done."

Suiting the action to the word a bucket of water was produced, the machine attached to the exhause pipe and the nipples dropped into the pail. A vacuum was created in the unit can, the water washed through the rubber tubes from the bucket and the operation was completed. Mr. Lipsit claims that the water is sucked through rapidly enough to remove every particle of milk and dirt. It takes only half a minute or a minute to complete the operation so far as one unit is concerned. The nipples and rubber tubes are then immersed in lime water until the next milking time.

IN UPPER ONTARIO.

It is to be expected that wideawake dairymen in such a wideawake, specialized dairy district as the one in which Mr. Lipsit lives, would be quick to avail themselves of every new invention calculated to cut down labor costs. It will come as a surprise to many, however, to learn that several mechanical milkers are in successful operation in such a new country as the Thunder Bay district of New Ontario. One of the well-satisfied users of an outfit in that new country is John Hunt, who supplies milk to the city of Sault Ste. Marie.

"I have used my milking machine several months and consider it the acme of perfection," said Mr. Hunt recently. Some of the advantages that Mr. Hunt claims for his machine are that it is easier on heifers and nervous cows than hand-milking. It is easier on cows with sore teats and he believes that the milk is cleaner and more sanitary. It costs this dairyman just $356.75 to instal a machine capable of milking ten to twenty cows. A three-horse-power gasoline engine brought the total cost up to $483.75.

This photo shows the sanitary advantages of the machine, with easily cleaned cups and vessels covered from contamination by bits of straw or hair.

"If I had five cows which were hard to milk I would have a machine," writes Mr. Hunt. "If I had ten cows and all easy milkers, then it is just a question of help at all times versus power and the mechanical milker. With more than ten cows get a milker at once and have the use of it while you are in this world and let those that come after you please themselves whether they milk by hand or by mechanical milker."

IN THE EASTERN TOWNSHIPS.

It is a long jump from New Ontario to old Quebec, but the milking machine is giving as good satisfaction in the old country as it is in the new. I have never found a better satisfied user of the mechanical milker than John J. Tannahill, of White's Station, in the beautiful Beauharnois district of Quebec. Mr. Tannahill swears by his machine that was bought second-hand and has given first-class satisfaction from the first day it was established in his stable. Mr. Tannahill's milking herd averaged only ten to fifteen cows, but the milking machine had already made itself indispensable. His experience is of particular value to breeders of pure bred stock who fear that the machine will injure their valuable cows.

"Not a bit of it," quoth Mr. Tannahill. "I have been using my machine on the most valuable cows I have in the barn and there are some that I could not replace very easily. And I have yet to notice any detrimental influence. The man with a pure-bred herd will find the milking machine just as great a convenience as the man with only grades."

These are only a few instances of successful and satisfactory experience with mechanical milkers. I have visited dozens of stables in which the milking machine is used and with only one exception the machine has given first-class satisfaction from the start. That one exception was the case of a breeder of pure-bred dairy cattle who tried the machine for three weeks and then discarded it on the plea that the cows were falling off in their milk flow. On hearing of this man's experience I have always made it a particular point to enquire of other users of the mechanical milker as to its effect on milk flow. The majority have declared that once the cows get used to it they give just as much milk as they would give to a good hand-milker. The rest state that if there is any depreciation it is too small to be appreciable and any loss in this direction would be more than counterbalanced by the saving in time.

A HERD OF 128 COWS.

R. E. Gunn, of Beaverton, Ontario county, has a herd of 128 cows and has

found the milking machine to be the solution of his hired-help troubles.

In former days on the farm we considered twelve cows, twice a day, a "big milking" for any man and the men who would do it or could do it were few and far between. Four men milked all of those 128 cows in less than two hours.

Mr. Gunn soon found after starting into dairying that one of the hardest things to get on the farm is hired men who are conscientious milkers. Even on his farm where the milking is confined to a certain group of men who have no team work or other farm work to do that interferes with the milking, he found it next to impossible to secure men who would treat the cows as they should be treated. He was up against the "average man" in earnest.

"To meet this difficulty," said Mr. Gunn to me, "mechanical milkers were introduced a few years ago. If the farm had to fall back upon hand milkers entirely, the present method of farming would most assuredly be changed and the dairy dispensed with. From the experience gained through close watch on comparative costs the margin of profit left after wages are paid to the average milker who thinks ten to twelve cows are enough to handle, is so small as to be hardly discernible. It is in the saving in the wage bill that the excuse for the mechanical milker lies. Even if the cows' average yields were a little lower through their use the ultimate saving would pay for their installation inside of two years in a large dairy."

Mr. Gunn keeps records of the individual cows in his herd and finds it as easy with the machine milker as when the cows are milked by hand, it being a simple matter to pour the milk from the unit can into a bucket for weighing. "We have not noticed any decrease in the average yield through the use of the milker, nor have we noticed any other detrimental effect," said Mr. Gunn.

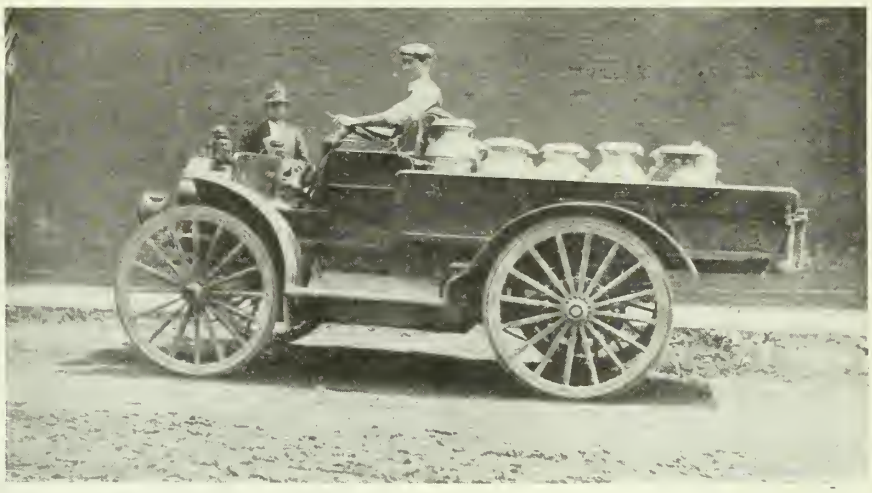
IN THE SHORTHORN DISTRICT.

A young farmer who has gone into the dairy business in the midst of a beef-raising community is F. H. Westney, of Whitby. He has recently installed a small milking machine for his small herd and is enthusiastic over the venture.

"I gave my order for a machine on May 16th last, and we milked our cows on the 19th with the machine. Since then we have given the machine severe tests, and we have come to the conclusion that the milking machine is here to stay."

Mr. Westney's machine is driven by a 1¾-h.p. engine. This outfit is a two-unit one. He milks from sixteen to twenty cows in an hour. The washing of the machine takes about twenty-five minutes each day. After washing, the cups and tubes are placed in lime water.

The following figures, as to the cost, were submitted by Mr. Westney for FARMER'S MAGAZINE:



The motor truck proves itself a money-saver for the creamery.

COST OF OUTFIT.

Milking machine (2 unit) including stall fixtures and express	$124.00
Engine, 1¾-h.p., also used for many other purposes	40.00
Shafting, boxes, etc.	5.00
Installing	10.00
Total	$179.00

The following is the estimated cost of operation for one year, milking an average of twenty cows twice per day:

Depreciation, repairs and interest on investment	$ 25.90
Gasoline, 5 gals. per month at 25c	15.00
Oil for everything	2.00
Man's time attending (including washing) 3 hours per day at 16 2-3 cents per hour	182.50
Total	$225.40

Cost per cow per milking, 1.54 cents.

Estimated cost of hand milking twenty cows for one year:

Man's time, 6 hours per day, at 16 2-3 cents per hour $365.00

Cost per cow per milking, 2.5 cents.

By these figures it will be seen that it costs only three-fifths as much by mechanical milking as by hand milking.

WHAT IT MEANS.

Can the average dairyman afford to buy a mechanical milker. It all comes back to the cows and the man. If the dairyman is milking 3,000-pound scrubs he is losing money no matter how he gets them milked. To spend a few hundred dollars on a milking machine and charge to capital account against such cows, is to sink just that much additional money in a concern that won't pay anyway. If a man is content to make a slave of himself from daylight to dark and press all the family for service at milking time while the hired man "puts up" the horses, and consider only net profits on his herd, such a one will have little use for a milking machine.

But for the wideawake dairyman with several good cows and a desire to keep satisfactory help and get the work done with a minimum of exertion, the mechanical milker will prove a blessing. This is the class of dairy farmer who is buying the milking machine in ever increasing numbers and using it to the satisfaction of himself, his family and the hired man.

THE ARMY WORM.

On account of the crops in some districts being badly attacked by this pest, it is advisable for every farmer to be on the lookout and ready to combat it if it comes his way.

The army worm is about one and one-half inches long when full-grown, and is striped with black, yellow and green, of a dingy appearance and much resembling the cutworm. When detected, all efforts should be centred on keeping the worms out of crops not yet attacked. A deep furrow (several furrows are better) ploughed around the fields with the vertical or steel side of the furrow next to the crop to be protected, serves as a barrier to prevent the march of the worms, as they will not be able to crawl up the straight side of the furrow. Holes or pits should be dug in the bottom of the furrow every ten or twelve feet to catch the worms as they crawl along looking for a place to get out. They can then be destroyed with a blunt stick or by burning straw over them.

By thoroughly spraying or dusting a small strip of the crop in advance of the worms with Paris green, and liberally distributing poisoned bran (mixed at the rate of fifty pounds bran and one pound Paris green, with enough molasses and water to sweeten it) large numbers may be destroyed. A field so poisoned must not be pastured until rain has thoroughly washed it. Whatever is done must be done quickly and at once, for a single day's delay may often mean the ruin of a valuable crop.—F. C. N., Commission of Conservation.

Farm Sales From Pictures

How Ingenious Farmers Have Increased Their Sales by the Use of the Camera

By J. C. INMAN

The selling of farm productions a little above the ordinary prices prevailing, means that much added comfort and prosperity to the farmer. To attain this end there is nothing so helpful as the whole truth. To assist a buyer to know his prospective purchase is a long step in making a sale. To this end the camera comes in as a potent sales agent for all the various products of the farm.

A PURE-BRED cattle breeder in Western Ontario had a number of fine young animals he wished to sell at the highest market price. He advertised in the farm paper of his choice and in due time got into communication with quite a number of prospective buyers. Many of those who replied to his advertisement lived within fifty or one hundred miles of his farm, but many more lived in Western Canada and in the Maritime Provinces.

It was quite evident that the men in the distance and particularly those in Western Canada were in a position to pay much bigger prices than those nearer home and for several weeks he carried on a lively correspondence in the hopes of pulling some of them across. There were many difficulties to overcome, however. In the first place the distant prospective purchaser had no real conception of the exact appearance of the stock they were negotiating to buy and it was impossible for the breeder to tell them many of the things they wanted to know before buying, although he did guarantee every animal to be thoroughly perfect when it left his stables. Another feature which held the buyer back was the possibility of the animals being what is commonly termed "poor sellers" on account of awkward appearances, and while they might be well-bred and milk producers, they would be far from satisfactory purchasers.

The pure-bred breeder soon saw that things were going back rather than ahead, and in order to give prospective buyers some idea of the quality of his stock, he had photographs taken of a number of the best and sent them to the men he thought most likely to buy. As a result of photographs he sold nearly every animal he had for sale, and although it had cost him quite a bit of money to get the town photographer to take the pictures, he had made several good sales at advance prices and had learned the selling power of a picture.

Being in the pure-bred business for keeps, the breeder naturally saw that it would not be long before he would have another lot to sell and in order to be prepared for the time, he purchased a medium-sized camera and experimented until he was as much at home with it as with the grain binder. It is six years now since he first sold stock with a photograph and although his business is now several times as large as it was then he still sells stock with the camera, but where he formerly sent a photograph it is now photographs and prospective purchasers are about made to feel that they had a hand in raising the animal they wished to buy.

The horse buyer does not often buy by mail, but it helps to have a photo.

As an aid in selling stock is only one of the many uses of the camera on the farm. New uses are becoming known every day and were its real value really known, we should soon find every up-to-date farmer an amateur photographer.

A man living about forty miles from one of our larger cities had a long, wending trout creek on his farm which spoiled pretty much of fifty acres for the ordinary pursuits of farming. For many years he had kept his share of the creek and the big fresh water swamp that went with it, shut off from the rest of the creek by several thicknesses of fine wire mesh at each end and in this inclosure it had built up quite a trout pond which attracted a small number of city men each year.

Not being in the best of circumstances he had endeavored for several years to entice enough city men to the creek to return him a dividend over and above expenses, but for some reason his efforts had not met with any marked success. There seemed to be many other creeks for the city men to go to which had equal if not better attractions and he was almost on the point of throwing the proposition up.

CUSTOM COMES TO A TROUT FARM.

About this time, however, the elder son, then in his teens, purchased a medium-priced camera and began taking snaps of the city men and their catches and some of the pretty camp scenes along the creek. The city men bought liberally of these photos to give to friends back home and in a very short time the boy found himself doing a land office business in outdoor photography which was providing him with more pocket money than he had ever had in all his life before. An unforeseen force, however, was at work which was to return more than the small profit on the photographs. The city men who had their photos taken at Silver Creek gave copies to their friends who spent their week-ends at Smith's Creek, and as a photo is always as good or better than the original, the men who fished at Smith's Creek were quite convinced that Silver Creek was a lot nicer than Smith's Creek ever could be and decided to go there next time.

They went, and ever since the fish farmer has had no difficulty in enticing people to his creek even though his entrance fee is very much higher than it was a few years ago. The little personal touch supplied by the photographs was all that was necessary to distinguish his creeks from the dozens of other creeks and to create a desire to see Silver Creek in the heart of the city men.

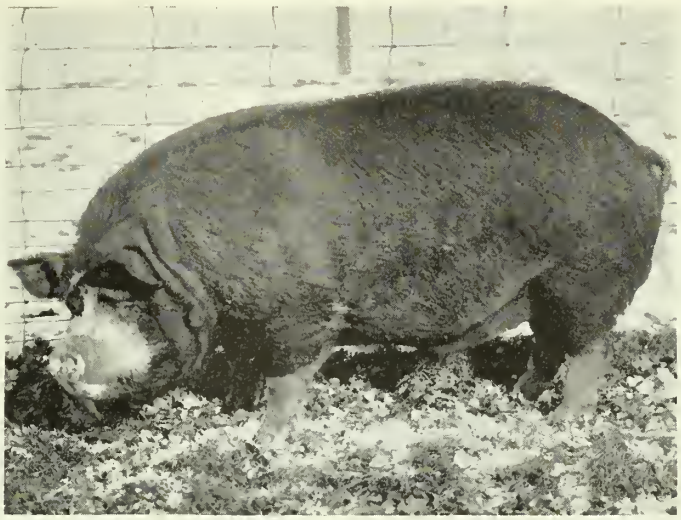
The above instances are only two of the many ways in which the camera can be made to increase the income of the farm or to help sell some product which requires a minute description.

As an aid in selling friut, the camera would almost seem to be the last possible

At the auction sale of Shorthorns at Meadowbrook Farm, Whitby, Ont., the property of Sir Henry Pellatt. Captain Tom Robson is seen on the auctioneer's stand. Some of these cattle went to Edmonton.

use it could be put to but that it is of value is quite apparent to at least one progressive black raspberry grower. The market at which this grower, "she was a lady," disposed of her fruit was pretty well stocked with all kinds of berries every year and as she looked at it there was only one of two things to do. To find another market farther away from home or to devise some unique method of getting her berries a preference in the consumer's estimation over her competitors.

She did not like the idea of finding and developing a new market and it remained to originate and work out some result - producing selling scheme. Cleanliness is getting to be the most demanded quality in the picking and handling of small fruit, and it's to this fact that this enterprising grower pinned her faith. To cheaply illustrate cleanliness what could be better than a photograph or two showing picking and packing methods and a copy of each sent to a selected list of names, whose owners were known to be very particular about what they ate. A personal letter in ordinary handwriting was sent in addition to the photographs and only a few words were written in each letter, which by the way were all copied from one original; the results were everything that could be expected and in addition to selling her whole crop without difficulty she got a little higher price than her competitors for berries of practically the same quality. The only difference being that she proved the quality of her berries and the others did not.



The buyer of hogs doesn't run much risk when he gets a photograph

OTHER USES FOR THE CAMERA.

Up-to-date pure-bred breeders nowadays are keeping a photographic record of the growth of all young stuff in order that prospective buyers may be easily convinced that at no time in the animal's life has it been stunted or subject to any disease which might hurt it in after life. Photographic records are also kept of the growth and development of test crops and various experiments. Barn improvements are photographed during construction and upon completion. Advanced equipments and improvements of other men are photographed and are a ready aid to the memory in constructing the improvements or in planning a new barn or other building from the combined ideas of several other men.

Then besides all these money-making and helpful advantages, the camera is still free for perhaps its most interesting work, namely, the recording of the one hundred and one personal events which happen every year around the home, the fields, and the picnic parties. Every one of these events may be caught and kept with the camera and a bit of film and in after years they will be the most prized of all your possessions. If you want to be up-to-date, live and enjoy life as others do and keep a record of that life, a camera will help you wonderfully. Outfits may be obtained at from three dollars up to thirty dollars, and it might be that one photograph would be the means of making more than the total investment.

The most recent development in the photographic art is the motion-picture camera adapted to every-day use. It is simply a little brother to the big machine that takes the movies and now instead of one cold, almost expressionless picture, we have a dozen or two life-like snaps showing the every movement of a herd of cattle, a bunch of colts or a harvesting or seeding scene for a couple of minutes' time; or if we like we may take the view from the front porch or the hill-top in the lane and not be confined to just a straight ahead view.

The motion-picture camera is bound to leap into popularity with horsemen and particularly the trotting men. A motion picture of a racer in action leaves nothing to guesswork, and a prospective purchaser may save a trip across the country by a half-hour study of the life-like snaps taken so closely after each other that no movement is lost, or again if the horse is all he is claimed to be and the motion-picture detective finds he is perfect in style, action and reach, a sale is as good as made and no ordinary photograph can possibly bring out an animal's qualities even although expertly posed. Breeders of fancy drivers will be able to greatly widen their field of operation with the motion machine, as a motion photograph of any particular driver may be taken and copies sent to prospective purchasers in all parts of the country. The pictures leave nothing to be desired in the way of a description and as a result many who would otherwise hesitate and then not order at all would with the picture evidence at hand feel safe in ordering without spending the time and money to visit the breeder's stables.

My camera showed exactly what my calf looked like.

As yet motion machines are a little too expensive for any but the larger breeders, land companies, and fruit concerns. It is possible, however, to have photographs taken at very reasonable rates by professional motion photographers who are now locating in all large Canadian cities and for the man with some particularly fine stock, a few dollars spent this way should prove a most excellent investment. Motion-picture men will be on hand at this year's national shows and interested men will do well to investigate this latest development in photography.

BARBADOS SHEEP.

At Beltsville, Md., near Washington, the United States Government maintains a farm for experimenting in its animal-breeding work. It is in charge of Prof. E. L. Shaw. Not the least interesting of the work carried on there is that in connection with the developing of a new breed of sheep.

The Barbados sheep are curious creatures and are probably of African origin. They are almost deerlike in form and carriage, being tawny in color and about woolless. They are marvelous breeders, the farm there having had an increase of 300 per cent. in one year. Another good feature about this breed is their supposed immunity from parasites. One objection, though, lies in the smallness of the size of the ewes, as they weigh about eighty-five pounds and their mutton is not very fine. Experiments in crossing this breed with the Merino and the Southdown are meeting with success. The new type which they call Barbadowns are beautiful creatures of fine conformation and so far uniform. If this sheep proves successful it will be a great thing for the United States and for the semi-tropical lands. This line of work, of adapting animals from tropical regions to the semi-tropical, is a most useful one for American agriculture.

Pat Burns, Cattle King: By W. A. CRAICK

His Present Position Grew Out of a Sheer Natural Fondness for Caring for Livestock

One of the seven wonders of the wonderful West is the organization of the Burns' stores. But while Pat Burns is recognized as a sort of Canadian Armour or Swift who is repeating in Canada the work of the meat barons of Chicago, his life story which gives the real secret of his success is less widely known. Mr. Craick traces this from a love of live stock which sprung up on a little farm in Ontario.

THE Canadian West has cradled many interesting personalities, but as yet has had small chance to produce national celebrities. If one counts out the few outstanding public men like the four Western premiers and the half dozen Federal ministers, past and present, there are not many individuals left whose names are known throughout the length and breadth of Canada. This is not to say that there do not live west of the Great Lakes numerous men whose characters and achievements are not worthy of nation-wide appreciation. It is only a recognition of the fact that the fame of these men has not as yet penetrated to all parts of the Dominion.

"One must perforce give precedence to Patrick Burns, of Calgary."

Among the few Westerners of the present day whose names have gained some degree of national prominence one must perforce give precedence to Patrick Burns, of Calgary. About him there seems to have sprung up a certain halo of romance. He typifies, in the minds of many Easterners at least, the successful cowboy, the man who has risen to opulence in the pursuit of one of the most interesting occupations in Western experience. He is also, in the conception of others, a sort of Canadian Armour or Swift, who is repeating to-day in Western Canada, the story made familiar by the lives of the meat barons of Chicago. That he is an unusual and curiosity-arousing person goes almost without saying. At the same time one cannot but confess that the real Patrick Burns and his life-story are not subjects of general knowledge and that a good deal of uncertain and mythical information is abroad about him.

Personally the cattle king is exceedingly reticent about himself, particularly if he feels that he is being pumped for information. He is ready enough to discuss business prospects, prices of livestock and the fine points of hogs and steers, but when it comes down to divulging personal experiences, he is as close as an oyster. There is one chapter of his life-story, however, which he cannot resist turning up and exposing as a sort of sample bit of his autobiography. It is one of the early chapters in the unwritten volume of his reminiscences and it relates to the period, now alas many years back on the scroll of time, when he and another lad, called Bill Mackenzie, attended school together in the little village of Kirkfield, up the Haliburton line from Lindsay.

As a matter of fact, Mackenzie was eight years the senior of Burns and eight years means a lot when one lad is six or seven and the other fifteen or sixteen. Those eight years of difference contained a whole world of boyish veneration. To little Pat, big sixteen-year-old Bill was a nine-days' wonder. He was cock of the school, the leader in sport and mischief and withal a clever lad who aspired to the dignity of some day being a schoolmaster himself. It was not Pat's way to be afraid of him. The Irish boy was a plucky little fellow and he would not hesitate to ally himself with two or three other youngsters to give the bigger chap a tussle, but it was all done in good humor and in no way interfered with the juvenile hero-worship.

It is certainly a commentary on the weakness of most human estimates that youth who bulks most prominently in the eyes of his school-fellows and is the big feature in the school-day world, so often fails in after life to justify the distinction. The hero of the class-room or the playground generally sinks into insignificance, whilst his humblest and most unconsidered worshiper shoots past him into the limelight of grown-up achievement. In the ordinary course of events, big Bill Mackenzie should have receded into the background. That he did not, proves his abilities were exceptional. The veneration of Pat Burns was not to be interfered with and to-day the cattle king of Alberta, himself a notable success in life, continues to look up to the railway king with unabated admiration.

There must be no denying the strength of Mr. Burns' personality and no decrying of his abilities. He would doubtless have made good eventually under any circumstances. Yet the faraway boyhood friendship established in the little village school at Kirkfield, when Sir William Mackenzie was the head of the highest form and Patrick Burns a member of the last juvenile class, was destined to play an important part in the after-life of the little Irish schoolboy. The day came when in the New West the two were brought into contact again and then it was that the railroad contractor was able to give an opportunity to the cattle dealer to show what was in him. An alliance was formed which still continues and it is common knowledge that the head of the Canadian Northern Railway holds an important interest in the big organization which Patrick Burns has built up.

SHOWED ABILITY EARLY.

Though he got his schooling in Kirkfield and lived in the neighborhood until he had grown to manhood, his native place was not this noted village, but the town of Oshawa on the lake front. His parents were Irish settlers and he was born on July 13, 1857, just escaping by one day the fate of arriving in the world on the Glorious Twelfth. While he was yet quite small the family moved inland to Kirkfield, near which his father bought a farm and started in to cultivate the soil and raise a few cattle. As Pat grew up, he took more and more interest in the farm work, at first doubtless by compulsion and afterwards out of sheer natural fondness for caring for the livestock. He early evinced an aptitude for judging the good points of cattle and is said to have made some very advantageous deals for his father in the market at Lindsay while he was still a mere lad.

Then came the call of the West. He had just reached his twenty-second birthday when the spirit seized him to try his fortune in that new land far beyond the Great Lakes, about which wonderful

stories of fertility were already being told. Land was to be had out there for the asking and besides the romantic element had not yet been snuffed out by the advent of railways and other civilizing forces. The Indians still roamed the prairies, buffalo were plentiful and traders and trappers continued to flourish in undisturbed possession of an immense territory. Perchance he might still find as absorbing adventures in real life as were to be read about in books, though for that matter young Pat neither then nor now laid much store in works of literature, good, bad or indifferent.

To make a long story short and curtail a wearisome journey into brief space, the new settler from Ontario penetrated west as far as Minnedosa, where he took up a homestead. As to the success or failure of his operations on his prairie farm, little information is available, but what is known is that he was soon engaged in a somewhat more lucrative occupation. In the early eighties population was coming into Manitoba in fairly good volume and every spring quite a number of prospective settlers would arrive in Portage la Prairie and start out from that town to take up land on the plains beyond.

PROVIDED THE FIRST TRANSPORTATION.

Young Burns conceived the notion of performing two services for the newcomers. One was to haul their belongings from the Portage to their destination and the other was to provide them with animal-power to break up the land. For this purpose he would go down into Minnesota in the winter when oxen were to be had comparatively cheap and buy as many teams as he could manage. These he would bring up to the Portage in the early spring and then await the arrival of the settlers. Whether he also furnished wagons on which to load the household goods of these people or not, is uncertain but at any rate he provided the motive power and himself convoyed the resulting caravan. When he had got the settlers to the end of their journey, he was accustomed to sell them the oxen and possibly the carts and pocket the proceeds of the transaction. Then he would return to Minnedosa and his homestead and farm for the summer, repeating the performance the following spring.

It is said, of course, that Mr. Burns began it all with a single pair of oxen, which he acquired in very poor condition from a neighboring homesteader and fattened up until they were worth double the money. When he sold these, he made his first journey back to Minnesota simply to replace them and the hauling up of settlers' effects was just a chance incident. It proved, however, to be so remunerative in the long run that he repeated it again and again until he had built up quite a respectable capital. Of those days he often delights to speak to his friends, relating how he carried his grub and a frying pan under one of the carts and camped out each night beside the trail. He was sturdy and strong and loved the open life.

MEETS WITH "BILL" AGAIN.

Then William Mackenzie entered again into his sphere of existence. Mr. Burns had lost track of him after he had left the Kirkfield neighborhood. In the interval, as every one knows, Mr. Mackenzie had passed through the occupations of dominie, country merchant, lumber dealer and small contractor and had now become associated with Messrs. Ross, Holt and Mann in some pretty big undertakings in the way of railroad construction. The quartette had recently been awarded the contract for the building of the road from Regina to Prince Albert and were in the market to purchase meat for their construction camps. At this juncture Mackenzie came across his old school-day acquaintance and, noting his capacity, offered him the job. Mr. Burns agreed to the proposal and thus began the work that was in time destined to bring him wealth and renown—the buying and slaughtering of cattle and the sale of meat. As yet he was to confine his efforts to supplying the railroad; later on what seemed at the time an unlucky circumstance would enable him to extend his field and establish his present business.

A BLESSING IN DISGUISE.

The way in which Patrick Burns was transformed from being simply a purveyor of meat for railroad camps into a general dealer on a large scale is quite interesting and goes to prove that often what looks like a misfortune is a blessing in disguise. After Mackenzie and his partners had got through with the Prince Albert line they turned their attention to the road that was to connect Fort Macleod, Calgary and Edmonton. Their meat supply had been so satisfactorily maintained that they took with them to headquarters in Calgary, the man who had been responsible for its continuance. This was in the year 1890 and ever since that date, Patrick Burns has made Calgary his home. He at once proceeded to attend to the requirements of his contract and according to custom bought up the requisite number of animals for spring delivery. The following year all went well. Construction was pushed forward and in the fall, the cattle dealer again made his purchase on a bigger scale than ever, buying a lot of cows on the Cypress Ranch. When the spring of 1892 came, however, and Mr. Burns was ready to take over the animals, he was dismayed to learn that, owing to financial difficulties, there would be no building done that season and the navvies would be laid off.

What was to be done? There were the cows, but where was his market? In the emergency the natural resource of Pat Burns showed itself. He would not be stuck but would boldly invade a new field. Taking the first train for Vancouver, he crossed the Rockies and sounded conditions on the coast. For a wonder all the indications were favorable. He put up his cows for sale and soon disposed of the entire herd at a most satisfactory figure. The experience opened his eyes and broadened his horizon. Thenceforward he was determined to hold the connection which had been thus unexpectedly opened for him.

From the spring of 1892 dates the establishment of the business of P. Burns & Company on its present lines and in the twenty odd years which have since elapsed, its expansion has been enormous. There are few towns of any consequence in Alberta and British Columbia which do not boast a Burns meat shop. They are as ubiquitous as the chartered banks and indeed are operated under as perfect a system. Even the new settlements along the line of the Grand Trunk Pacific, like Fort George and Hazelton, are blessed with his establishments, it being the policy of Mr. Burns to follow up railroad construction very closely. In the Yukon, on Vancouver Island, in the Crow's Nest, the name of P. Burns & Company is a household word and in the cities it is no less prominent. Including his wholesale warehouses, Mr. Burns now controls eighty separate shops. These with the packing plants in Cal-

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The handsome residence of Patrick Burns, at Calgary.

Beans Add $400 to Farm Yields

One Farmer in South-western Ontario Paid for His Forty-acre Farm in One Crop—Methods of Cultivation

By TOM E. DOBBIN

The bean-growing industry is making rapid developments in some parts of Canada. Especially in western Ontario are the farmers turning the valuable legume into dollars, at the same time enriching the soil and providing a staple food for man and beast. This story of how one crop paid for a farm will be of interest to farmers throughout the Dominion.

"WE have come to depend upon beans for the money crop," remarked a farmer who had been in the bean-growing for over thirty years. "See that farmer over there?" and a forty-acre lot without buildings was pointed out. "A few years ago that lot was bought on speculation for eighteen hundred dollars. The first year he planted the whole thing in beans and that one crop made up the whole price. It isn't everyone who can do as well as that, but he did it."

Now there is an old saw abroad that you have said the worst about a farm when you say that it is too poor to grow white beans. There is truth in this saying, but the man who buys a bit of run-down land in the hope of making his fortune by growing white beans thereon is likely to become long on disappointment and experience, and short in his bank account. The best of land is not a particle too good for beans. Men who have grown this crop for a life-time have never found a field that is too fertile for this money-making legume. Experience has proven that—that the ranker the growth, the more and better the pods and the larger and better the beans—and, of course, the more abundant the valuable bean straw.

Beans do well on clay loam—the loamier the soil the better. The aim is to have this crop follow the clover crop. As soon as the hay is harvested the farmer applies as much manure to the sod as he can well spare. Some put on about twelve spreader loads to the acre. This top-dressing produces a rank growth not only of clover stalks, but it deepens the root system of the clover as well. The field is sometimes plowed in the fall. If not it is plowed in the spring. In any event the aim is to give a cultivation of the deepest and most thorough character. If the seed bed can be made eight or nine inches deep, all the better for both the beans and the bank book. As this crop is not sown until the rest of the farmer's spring work is disposed of, ample time is afforded for the slaughter of weeds before the bean crop is planted.

When artificial fertilizer is used in connection with this crop it is used as a supplement and never as a substitute for barnyard manure and other humus and nitrogen makers. Nor does anyone substitute artificial fertilizer for elbow grease or hard common sense. When used the artificial fertilizer is applied at the rate of from two hundred pounds to five hundred pounds per acre made up as follows: two parts of ammonia, eight parts of phosphorous and five parts of potash. This is drilled in broadcast about four or five weeks before the time of planting in order that it may become thoroughly incorporated with the soil.

SELECTION OF SEED PAYS.

The soil is an important consideration for the bean crop. The growers who know their business are the keenest to appreciate the value of hand-picking their seed. The aim is to plant no seed but the best. Every seed that is wrinkled or spotted or shrunken or deformed in any way has some bad history behind it that no farmer wishes repeated in his field. It is right here that the bean-grower is going to have his battle. The bean has its enemies as has everything else that is any good, but the grower who watches his seed need not worry over these enemies. He may win his battle before it begins if only he will take pains about his seed. The best way is for the farmer to grow his own seed or to secure it from a source that is absolutely above reproach. The farmer will do well to go over his field carefully and to select the portion that has developed the finest plants. If there are evidences of defects of any kind, such as discolored leaves or pods or of anything else than should be present in a healthy plant, the part of the field so affected should be rejected as far as seed purposes are concerned. The plants selected for seed should be harvested separately and threshed separately. The hand-picking cannot be done too carefully. Any bean with dark, sunken specks or spots or that is marked with yellow blotches or that is yellowed and shrivelled or that is deformed in any way must be rejected. This picking of the seed requires care but the man who persistently and consistently tries to improve the quality of his seed will find himself repaid for his labor many times over. Careful selection of seed in the way indicated, non-cultivating of the crop when the plants are wet, together with a good rotation with other farm crops will give the farmer practical immunity from the diseases that ordinarily attack this crop.

The seed being selected and the ground having been prepared for planting, the farmer sets his farm seed-drill to sow the beans in rows twenty-eight inches apart, at the rate of about three pecks to one bushel per acre. The sowing may be done from June 1st to June 15th. These dates are approximate. Should a late frost or an unusually heavy rain destroy the first sowing there need be no discouragement. The best practice is to rip up the crop and to re-sow. The only loss is the seed. There will be the gain that comes from the extra working of the land, a gain that may more than compensate for the loss of the seed. As a rule there is plenty of time for the second crop to mature. If frosts linger long in the early part of the summer the farmer may well hope that they will keep away in the early fall.

When cultivating the land after the beans are sown it must be remembered that this crop develops a magnificent root system, and that all the roots are needed for the maturing of the plants. Some have found it good practice to burrow the entire field with a light slanting-toothed harrow or a weeder. Care must be taken to do this, when it is done, when the plants have four leaves and in the middle of a

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Part of the bean crop that paid for a farm.

Land O'Gold:

By JUSTUS MILLER
Illustrated by MISS MARY V. HUNTER

A Social Revival and a Secret Which Makes Jimmy Forget All About His Orchards for a While

SYNOPSIS OF PREVIOUS CHAPTERS

Land o' Gold is the name of an Ontario farm in a well-settled district. An only son who is brought up there finds the mortgage and the uninteresting succession of chores and resultless toil, to be a hindrance to his future, and so cuts loose from the farm. He sees it is an education he wants and so decides to attend the agricultural college, but lack of funds drives him into newspaper work at Ottawa. His visions of usefulness are soon destroyed by the sordid grind of the editorial room and he drifts to departmental work only to detest its blank future. At a Sunday School picnic he meets Grace, the daughter of a lumber king, who sets his imagination on fire. Just as he so plans a telegram from his father at Land o' Gold contains fateful news. His father has been injured at a barn-raising and is unconscious when he reaches home. After the death of his father he decides to carry out his wishes to make Land o' Gold pan out. When he would feel discouraged, visions of Grace appeared before him and he felt that he could not fail. He makes a study of farm conditions and decides that proper business management would settle most of the difficulties confronting the farmers of to-day. He tries up-to-date methods on the old orchard with such gratifying success that he feels safe to borrow the insurance money from his mother and rent sixty acres of old orchard in the neighborhood. In the meantime, Molly makes plans to brighten the social atmosphere of the community.—Editor.

WHEN Molly started out to regenerate home conditions in our community she ran straight up against a stone wall. The ladies who didn't need any regeneration were very enthusiastic, but the others failed to enthuse.

"What's the use of me comin' over to your place?" said Mrs. McBeth, standing with arms akimbo in the doorway. "I'd be glad to come alone but Mrs. Mitchell and Sam Newton's wife ain't in my class. What'd I want to meet them for? I ain't got no clothes. How could I do any visitin' like that and me in a miserable shell like this?"

Poor Molly was just twenty years old. She confessed to me afterward that her courage nearly failed. But I have never feared for Molly. Girls with her chin can't be turned down very easily.

"Do you remember the time you found me when I got lost," returned Molly, breaking away from the subject. "Mother often tells me how frightened I was and that you took me into your mother's house and gave me a pretty hair ribbon before you brought me back. You must have been quite a young woman then."

"Law, now, child, I do remember that. Sich a little tyke you was then! Your brother was just a wee shaver, too. I often think how he got stuck in the mud behind our place. He had rubber boots on and young Jake Smith came over to get pa to pull him out or he'd have had to leave the boots there and walked out in his stockuns. You used to be two little pills then."

"I believe I've got that hair-ribbon yet," said Molly. "You used to come down quite often. Since your mother died I suppose it's different. We're trying to get all the old girls together down here again to talk over old times. And clothes won't matter for we're going to have a ragged girls social. The one who is dressed the worst will get a prize."

"You don't say! Well, I 'll see; I dunno but maybe I'll come."

And she did come. Almost all of them came. The affair was held in the afternoon and no men were present. Next time Mrs. Mitchell had the social and very few stayed away. Molly had struck oil the first blast.

"But it won't last very long unless we do some work," Molly told me. "I think we'll have to hold our meetings in the church. Yes! I know some of the holy brethren will have the horrors. A few

Originally it had been a log hut, thrown together by a U. E. Loyalist.

horrors won't hurt some of them either.

"Anyway I've grown tired of this skim-milk, "Oh-give-us-Lord," sort of religion. Seth Brown prayed the other night for a quarter of an hour at league, and it was all "give." Give! Give! that's his religion. But what has he ever given?

"Even the minister gives me the impression that his vision of Christ is that of a timid, humble sort of man who suffered all things and endured all things. And this is held out to people as an ideal.

"It may go down with some but it doesn't with me. It doesn't with most of the young people either. We want a religion with red blood in it; one that will call out our loyalty and our strength. One that is strong in the things we do, not in what we do not do.

"That's what Christ left us. Why, he wasn't timid, or humble or meek. He was a great strong man. Single-handed he drove a bunch of traders from the temple. He was a proud man—proud in his self-respect. And he didn't spend a great deal of time telling others what to do, either. He worked. His prayers were remarkably short. His teaching wasn't of a praying, singing, talking religion. He went about doing good. His idea of doing good was in working good. Some people seem to think if they don't do certain things they'll get to heaven. Billy Stevens gets drunk but when people are in trouble they go to Billy. If they don't, he goes to them. Sam Harris never did anything wrong in his life, I think, but he never helped anyone either. Oh! There'll be some terrible surprises by and by.

"Now Jimmie, we've got a mighty big problem here. The church has been with us ever since the land was cleared, but it hasn't helped matters very much. It has been so busy preparing people to die that it never has taught them to live. The more I think of it the more sure I am that the church isn't fulfilling its mission. It's all right to tell Mrs. Mason about a beautiful home in heaven, but why doesn't it help her to make a beautiful home on earth? No wonder men and women grow hard and bitter. Do you suppose Bill Mason feels much like scattering seeds of kindness around when his mortgage interest falls due. If the church would show him how to pay off the mortgage he would have some heart for the seeds of kindness experiment, perhaps.

"Why don't they preach from every pulpit that better farming and better living go together? Just consider the conditions in the blow sand country. There poverty and vice live hand in hand. Here conditions haven't been so bad, but what opportunities the church workers have missed! Why do not the fathers and the preachers of our churches make it a part of their religion to study agricultural conditions and to direct a movement for their betterment. If every young minister could spend two years at the Agricultural College you would see a difference.

"I've been talking with Mrs. Mitchell and Mrs. Newton and they are agreed upon this. Why a good, clean home is the most melodious hymn the Lord can listen to. And it is sung all day long, forever, maybe. So we are going to make the church our headquarters. Every Wednesday afternoon we are to have a meeting. We are going out after these women and we'll get them to broaden their vision in some way.

"In the winter we are going to have social evenings in the homes. As soon as you get on your feet you can talk farm management all you like. If we can get the men and women together, and can give them some real thing to work for socially and some innocent amusement we shall have done a great good."

Meanwhile Molly started on her bee-keeping proposition. I don't intend to go into the details of this, for just after she had got it going successfully she was compelled to drop it. However, the first year she did pay for her apiary. It was a revelation to me. Not every business will pay for itself in one year. As a result many did go into that line of work. Indeed, one of the features of the Jolly Old Folks Club was the effort to have all the women, not too fully occupied otherwise, study some money-making project.

At times that summer I felt a great yearning to see Grace. I wondered how she was and I longed to see her. Her letters were bright but it was two years since I had left Ottawa. I wondered where Jack Harvey was. Sometimes she mentioned him, and I would be miserable for a week.

But I had determined not to go to Ottawa until I had proven myself. I might not be a very great man, but at least I would not be a clerk. And so I waited. I wonder how many others have waited and have eaten their hearts out in the waiting.

That fall Grace invited Molly to visit her. She had been greatly interested in her work, and wished to see her. After considerable persuasion she left in October.

"Good-by Molly," I whispered at the depot, "Give my best to Miss Adams and have a good time."

Molly smiled but looked doubtful. Three weeks later she returned, still smiling.

Now Molly had spent a year at Alma College and could take her part well anywhere. That she had had a most enjoyable time while away I gathered by her conversation. Of Grace she could not say too much, nor of her mother. Of the lumber king she said little, for reasons I understood afterward.

But there was one cloud.

"Did you know a man named Harvey?" asked Molly one night.

"Jack Harvey," I inquired quickly. "What of him?"

"I don't like him," said Molly, blushing. "He hovered around me the whole time. One evening he tried to kiss me—"

"Oh Lord!" I gasped, "that pup: I thought he was trying to keep company with Grace."

Molly glanced at me queerly and then squeezed my hand.

"Never mind, Jimmy. He doesn't want Grace. He has never kept company with a girl in his life. He keeps company always with his vanity. He loves each new girl he sees. To kiss and to hold hands is his conception of love. He is just a big, silly, empty-head. Some girls might go crazy over his family and his diamonds and his black hair but not girls like Grace. I hated him and that was why I attracted him, I think. She seems to endure him somehow. I suppose he is a family friend. But he has an evil mind, Jimmy."

Jack Harvey! He seemed to cross my path at every turn. How I hated him! It may have been an unreasoning hatred, but it was instinctive. Sometimes a subtle sense that remains from our savage forefathers warns us where our reason fails to show the danger.

I listened eagerly for each word of Her. I was looking backward with my old eyes. Deep respect and admiration and reverence for her womanhood colored my love. It gave me a feeling of humbleness that did not flatter my sense of vanity I must admit, but I thank God it was so. I would not give much for a love that is not founded upon these three.

Molly told me that Grace was coming to visit us some time, perhaps next summer. Oh, if I had only a few years' start!

"What's the use of me comin' over to your place?" said Mrs. McBeth, standing with arms akimbo in the doorway.

Now all this time I had noticed that Jake was thinking deeply. He wasn't the free and easy boy of the year previous.

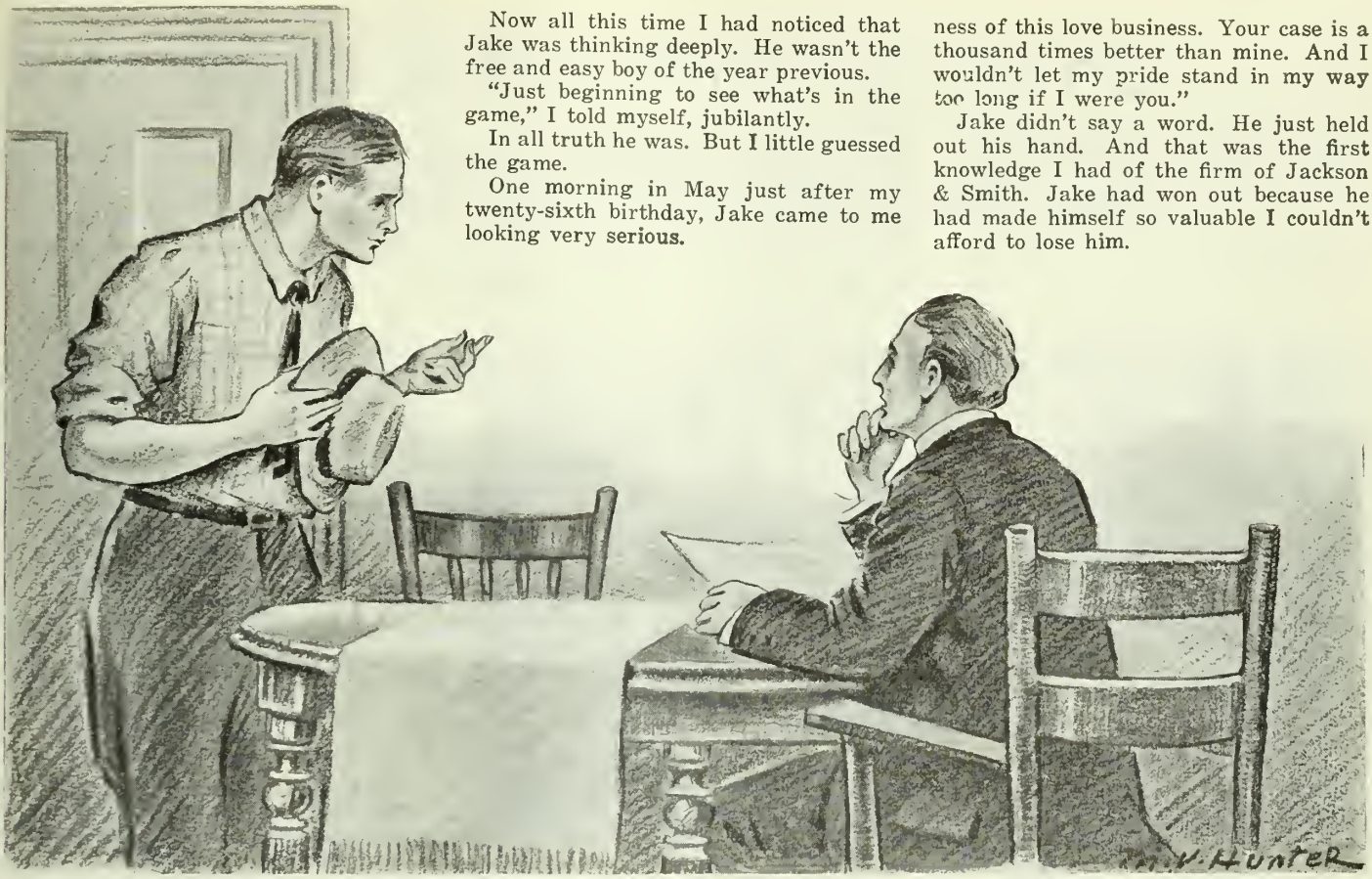
"Just beginning to see what's in the game," I told myself, jubilantly.

In all truth he was. But I little guessed the game.

One morning in May just after my twenty-sixth birthday, Jake came to me looking very serious.

ness of this love business. Your case is a thousand times better than mine. And I wouldn't let my pride stand in my way too long if I were you."

Jake didn't say a word. He just held out his hand. And that was the first knowledge I had of the firm of Jackson & Smith. Jake had won out because he had made himself so valuable I couldn't afford to lose him.



"I'm in love with Molly. I've just got to make good."

If I had only the wealth of idle Jack Harvey! My apple venture looked so small then. Even though it succeeded, what would it amount to!

I went to bed very miserably that night. I had not yet learned that we must not try to read the future; that the little by little accomplishments of every day accumulate rapidly into great things by and by. But my greatest lesson was to be the relative poverty of mere riches. I should have learned that the night Daddy lay cold and still. The final lesson was coming soon.

That fall, the Mater and Molly fixed over the old home. It was a fine old place, built in the days when timbers were placed in a house that would remain for ages. It was finished with the finest-grained chestnut and oak I have ever seen. It had a history too. Originally it had been a log-hut thrown together by a United Empire Loyalist away back in '83. After that a larger house had been built by his son. This had been replaced in more prosperous days by the building my father had bought.

I mention this because these associations gave a charm to Land o' Gold that nothing else could have given. What is a modern city mansion compared to such a home when the spirits of brave pioneers clasp the hands of the fearless wives of '83 under the lonely pine trees.

Well we made the final improvements that year. Hot and cold water systems and a couple of bath-rooms were installed. We had a gasoline lighting plant and a telephone placed in next. Molly even began to look at automobile advertisements. Bees, she argued, would do it.

"Well Jimmy," he said, "I think I'll have to leave you, I've been here five years now and I want to get started myself."

"I'm awfully sorry to hear that, Jake," I replied. "You've made yourself invaluable to me. You know as much of the productive end of this business as I do. Will a raise in wages hold you?"

"It isn't that," returned Jake. "I know I'm getting more than any hired man in the county now. But that's just the rub. You see, I want to do something for myself. I don't want to be a hired man.

"Jimmie, we've always been chums, and I may as well tell you the truth. I'm in love with Molly and I've just got to make good."

"Gee whistles!" I stammered, "Jake, you've surely got me stopped this time. Said anything to Molly about it?"

"No, I haven't. I'm only a hired man and I'm not going to ask any girl to take me as that."

"See here, Jake!" I exclaimed, "I simply can't have you leave me now. You've been like a brother to me ever since the day I licked you down by Len Potter's hog wallow when we were little chaps. Besides, I can't afford to. You know just as much about this business as I do. Now I've a plan that has mighty big prospects. I wish to organize a county co-operative association here when these fellows get going a little stronger. I believe I can do it and swing the managership. I must have you to handle the productive end of my business. When that goes through I think Jackson & Smith will look mighty good as a business name.

"Jake, old man, I know all the bitter-

A partnership may be a blessing or a double-edged sword, depending upon the character and ability of the men. But Jake and I have prospered. This spring I heard a buyer in Chicago say that he didn't have to look into the center of a barrel of apples that had the name of Jackson & Smith upon it. These are the principles by which we have used each other and the world.

I was working in a new orchard a few miles distant all that week.

Molly came out to open the gate when I returned.

"Jimmie," she said, as we drove toward the drive-house, "I've got some news for you."

"Yes," I said, looking into her eyes mockingly, "Let me congratulate you. But are you as glad as all that to leave poor old Jimmie?"

"Oh Jimmie, stop," said Molly blushing. "It's not—oh, how did you know? That's mean."

"Now I have a notion not to tell you at all. Put your ear down, old silly, until I whisper it to you."

Right there I forgot all about my orchard as I have told you once before.

To Be Continued.

Naturalness is the soul of art. Architecture, with all its grandeur, had its beginning and will have its ending in the humble building of a home. The great songs are not the grand oratorios, but the simple ballads that sing themselves. The greatest picture in the world is of a mother and her baby.

Growing Chilliwack's Hops

As High as $500 an Acre was Realized Last Year where Insects were Beaten and Good Cultivation Given

By DAVID WILLIAMS

The Hulbert hop fields, Chilliwack, B.C., showing overhead wires for the vines.

Hop growing is fast becoming one of the most remunerative industries of the British Columbia farmer. The writer of this article gives a most interesting account of the cultivating, harvesting and curing of the crop, with convincing figures to show the profits derived. Even on a small scale this promises to be a side-line worth while for the mixed farm.

ABOUT sixty-five miles south-east of Vancouver at the terminus of the B.C. Electric Railway nestling among the hills and surrounded on all sides by high mountains is situated one of the most beautiful and fertile valleys to be found under the sun.

It is not extensive for there is only about 55,000 acres of arable land. Magnificent and abundant crops reward the agriculturist for his labor. The farms or ranches, as they are called, vary in size from an acre or two up to 100 acres. The chief products are milk, butter, cream, eggs, hay, potatoes, vegetables, grain and hops.

There are also large numbers of horses and cattle raised in the valley. The chief markets for the products are the coast cities where good prices are secured. The demand is greater than their supply.

To give some idea of the productiveness of the Chilliwack County, this small community sent to market last year over $300,000 worth of milk and cream besides supplying the largest population of the town and district. Another proof of its fertility is the fact that land sells anywhere from $250 to $1,000 per acre, and it is claimed that interest can be earned on farms even at these high prices.

There is considerable fruit also grown in the valley but that has not been gone into extensively.

A feature showing the progressive spirit of the people is that nearly every farm and ranch is supplied with water from a central station. Telephones and electric lights are available in every home of the community, rural as well as urban. One of the big industries of the valley is hop-growing, which is done on quite an extensive scale. The hop roots which can be obtained from growers at about $4.50 per thousand are planted in the early spring in rows seven feet apart each way. This allows for cultivation with horse implements to keep down the weeds. In British Columbia where growth is very rapid, it is necessary to keep this cultivation constantly else the plants would soon be smothered.

Almost as soon as the young vines appear above the ground they are attacked by an insect known as the British Columbia hop flea beetle, a pest said to be peculiar to British Columbia. A few years ago this threatened almost the entire destruction of the crop and in some instances did destroy 75 per cent. of it. So far no very efficient means has been found of combating the flea as it is quite impervious to spraying poisons. Any spray preparation that will kill the flea will also seriously injure the plant. The only effective means of preventing its ravages is with the aid of the tar board, an operation that is tedious and laborious.

THE FIGHT WITH FLEAS.

When the insect attacks the young vines the grower and his assistants take pieces of tar board and holding them in the left hand, with a brush something similar to a feather duster, knock the insects off the vine on to the tar board until it is filled, when it is burnt and another one procured. This operation it will be seen is expensive, but it is the best and most effective that has ever been devised. It must be kept up day after day till about the first of July when the fleas disappear to return about the beginning of August. By that time, however, the vines have attained considerable length as they will grow in a good season six inches per day. On the return visit they are much more easily handled. It has been observed that the insect will not fly upon the vine but climbs from the bottom up the stem.

To prevent this a small piece of cotton is wrapped around the lower part of the vine and covered with a sort of tanglefoot that catches the flea and holds him prisoner. Those coated strips have to be constantly replaced by fresh ones.

B. C. Dairyman's Convention at Chilliwack, B. C.

Another of the hop-grower's enemies is the hop aphid, a small louse that attacks the vine and the hops at a later period. These, however, although troublesome are kept under by constant spraying with a preparation of Quassia chips and whale-oil soap. This insect comes in millions upon the vines if not properly attended to. Some calculators with mathematical nicety say that one pair of them will increase to a ton of lice in a season if none of them are destroyed.

TRAINING THE VINES.

The method of training the vines on the coast is quite different to that practised in the East. There are none of the forests of hop poles for the vines to climb, as is familiar to those who have visited hop yards in Eastern Canada. Instead of this the vines are trained on the trellis system which is claimed to have advantages over the pole style. It is said that the hops are healthier on the strings, more successfully sprayed, mature earlier, are usually richer and brighter. They can be picked cleaner, and are much more easily torn down for picking. Also by this method the hops can be picked without cutting the vine, a practice which is harmful since it prevents the return of material from the vine to the root of the hop and by causing a loss of food reserves to the stock produces a weakening effect on the succeeding crop.

The trellises are generally made with cedar posts about twenty feet long and six inches in thickness. These are let into the ground two to three feet and thirty to forty feet apart, the end posts being strongly braced to prevent sagging. Over the top of the posts wires are strung from one end of the row to the other and also at right angles. Posts are also set at the ends of the rows at short spaces between the outside posts. From those vines are run over the other wires making a complete network of vines overhead. When the young vines gets big enough to climb a stake is driven near it into the ground to which a stout string with a hook on the upper end is attached. This hook catches the wire above and the vine is started on its climbing career.

PICKING THE HOPS.

When the hops are ready for picking, the string is unhooked from the overhead wire and let down to a convenient height for the picker to operate. For the picking season large numbers of Indians are employed, Siwashes and Klotchmans; or bucks and squaws as they would be called in the East. These do a large part of the work and are said to be quite efficient. As many as from six to seven hundred Indians are given employment during the hop harvest. Like the fruit-growers of Niagara, the services of the Indian mean much to the finances of the hop farmers.

When the hops are picked they are taken to kilns, specially constructed for handling them, where they are dried and afterwards packed in bales and shipped to market.

$400 PER ACRE.

In the Chilliwack valley where the soil is rich, the average crop is about a ton per acre. The price, however, varies very much. Some years it is about ten cents per pound, but last season the growers realized twenty-five cents a pound. At the latter figure the hop-raisers make handsome profits.

It requires considerable capital to engage in hop-raising on any extensive scale for it is a constant outlay of wages from the time the ground is prepared for planting until the produce is labeled for the market, but a return of $500 per acre is very tempting and it is not absolutely necessary to go into it on a large scale. A small yard can be as successfully worked as a large one.

New Homes From Old Houses

The Shifting of a Partition Wall and the Addition of a New Wing Bring Convenience, Charm and Comfort to the Old Farm House

By GENEVIEVE

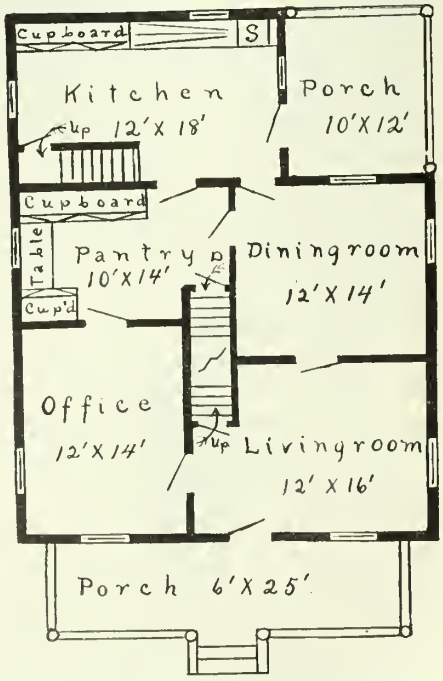
There are many farm houses, small, inconvenient and unattractive that with a little trouble and expense could be made as pleasing as a new building. Building on a room or two, the addition of working conveniences, good heating and sanitary appliances, and the moving of a partition to get rid of small or unnecessary rooms can work wonders in some very impossible-looking houses. The Farmer's Magazine will be glad to help its readers with any of these problems.

If your old house is in good repair, but small and inconvenient, it is possible that it can be made over into an attractive modern home at half the cost of building a new one. When you investigate you may also discover a small fortune in the shape of oak beams or walnut woodwork whose identity has been concealed by coat after coat of paint. In remodeling it is important to make the most of these, by removing the ceiling plaster to show the beams, and sanding off the paint to allow the woodwork to take a natural stain. The rest of the making over will consist largely of "building to," disturbing the walls as little as possible.

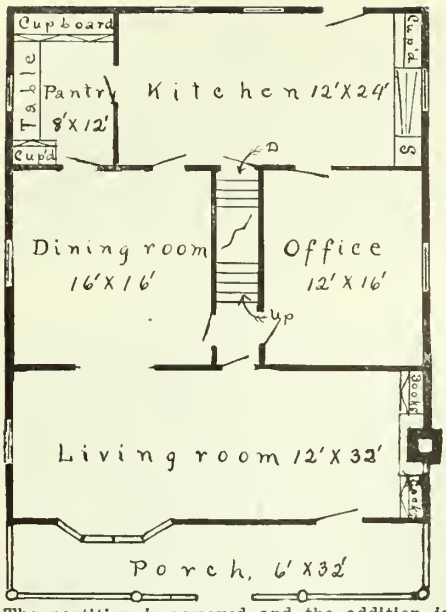
One example of the common square type.

We have here two examples of the common square type of farm house. In the first set of plans the house is enlarged by adding a kitchen at the back; in the second the new wing is a living-room. This, of course, brings about some rearrangement of the rooms already built.

In the first plan the front door and the stair door both open into the dining-room —a rather awkward arrangement. When the new kitchen is added this front room can be used as a living-room, and the original kitchen as a dining-room. The stair partition is moved a few feet in order to have the cellar door in the pantry instead of the dining-room. With the living-room the parlor is not needed and is fitted up for an office, while the conventional parlor bedroom, has had roomy cupboards and a convenient work table built in, making an ideal pantry.



The same house with a porch built on the front and a kitchen at the back.

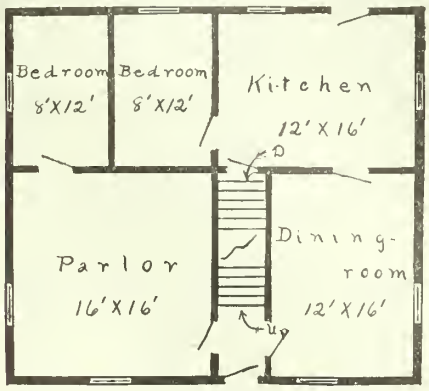


The partition is removed and the addition is built right across the front.

In an old house the rooms are generally rather small, so the additions can afford to be fairly large. We have here a kitchen twelve by eighteen feet, and a ten by twelve back porch where a good deal of the kitchen work may be done in warm weather. The back stairs and the sink and built-in cupboard are conveniences worth while. And by the way, be sure the builders don't by any chance put the drainboard to the right of the sink, unless the worker is left-handed.

Instead of the front stoop, a six-foot porch has been built right across the front of the house. This will add more than the other improvements to the appearance of the place, and when you learn to use it, will be one of the pleasantest parts of the dwelling during the summer.

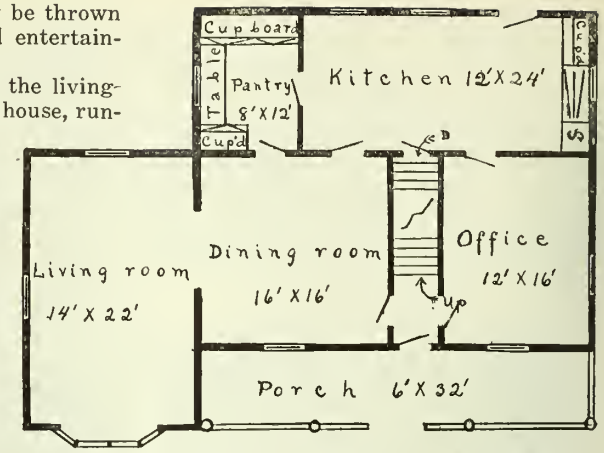
The second old house differs from the first only in having a little square vestibule with the stairway going up opposite the front door. There is always a small bedroom off the kitchen as well as the little "spare room" at the end of the parlor. The extra room upstairs over the new wing makes these bedrooms unnecessary, so by taking out one partition the space can be used for a pantry and additional kitchen room. In building on a living-room it is generally an advantage to place it beside the dining-room, cutting out a wide opening for sliding doors between, so that the two may be thrown together for little socials and entertainments.



This type of farm house may be made comfortable and attractive by building on a living room and porch.

In the first remodeled plan the living-room is built at the side of the house, running six feet beyond the front, to come flush with a porch which extends to the other end of the old part. This gives the house a rather striking, broad rambling appearance.

In the second plan the addition is built across the front. It may be left in one long living-room or divided into a living-room and vestibule, but for a country home there is something very homey and hospitable about a big room into which we come direct from the out-of-doors, especially if it have a huge stone fireplace across one end. We have to have a chimney in the new part anyway, so a fireplace isn't out of the question.



Where the living-room is built on as a side wing.

The third plan seems to haxe considerably more room than is actually added, as the office and living-room are combined, leaving only as much of the main wall as is necessary for the support of the partition on the second floor. There will be an extra bedroom over the new part. The widening of the hall to give room for a box seat and coat hangers, and building in a bookcase add a great deal to the appearance and convenience of the house. The back-porch, too, is a real housewife's friend.

In these plans the lay-out of the floor and cellar, and the placing of chimneys has been omitted, as the original chimney will remain where it is, and practically the only alteration in the second story will be to make larger and better ventilated bedrooms or to put in clothes-rooms where they are needed. The improvement most needed in old farm houses is running water and efficient heating appliances With these installed and the necessary shifting of a wall or two, or the addition of a wing to give comfortable living space, the old house may become a more charming home than the unseasoned model of newness.

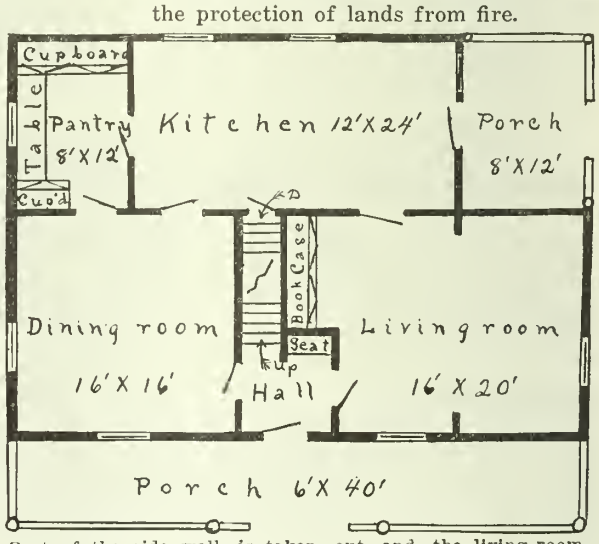
FIRE GUARDS ON THE PRAIRIE

Clyde Leavitt, chief fire inspector of the Board of Railway Commissioners for Canada, has issued a circular showing the fire-guard requirements of the Canadian railways. This is quite a lengthy article and can be had by every farmer upon application to the Board of Railway Commissioners at Ottawa.

Of particular interest is a regulation regarding grain and stubble lands on the prairies. The Railway Act requires that railways shall maintain and keep its right-of-way free of dead or dry grass, weeds and other unnecessary combustible matter. As to the portion of lines where the right-of-way adjoins grain crops, this requirement is extended to include the strips between the right-of-way and the edge of cultivation provided this requirement shall not apply more than ten feet outside of the right-of-way. As the farmers ought to be the most interested in this matter their co-operation is expected.

The railways are to provide for the applying of fire-guards through grain stubble land adjacent to their lines in Alberta, Saskatchewan, and Manitoba, wherever such action is necessary in the judgment of the owner of the land; and where such owner after the regular notice of the railway company shall plow such fire-guard four feet in width at a distance of 100 feet from the main track, for this he is to get $1.75 per mile, such account to be paid by the company within ninety days after its submission to the company by the land-owner.

Notices have to be posted by the railways at all public crossings so that a farmer who wishes to know the full particulars about this fire protection scheme should make inquiries for this bulletin at once. It deals also with grazing lands and other points that may be brought up in the protection of lands from fire.



Part of the side wall is taken out and the living-room enlarged. The porch runs the entire length of the front, giving a fine broad effect.

National Affairs: The Men Around the White Plume: By Harry W. Anderson

Editor's Note:—Adversity has its uses, and men within the Liberal party are now saying that the defeat sustained at the last election has done a great deal of good, inasmuch as it has brought to the front a group of the younger men. The rank and file of a political party develops faster in opposition than in power. The accompanying article tells of the younger men in the ranks of Liberalism who have come into prominence since the party was retired to "the cold shades of the opposition benches." In the next issue an article will appear dealing with the work that the Dominion Government has done since its accession to power three years ago.

"THERE is no gambling," quoth Disraeli, in one of his cynical outbreaks, "like politics."

Less than three years ago a decimated, disheveled and disheartened remnant of Canadian Liberalism nervously crawled out of the cyclone cellar after a disastrous electoral hurricane. The world had a cold, grey hue. All about was devastation and desolation. The Eden of power and prestige had been wiped out. Tall Ministerial oaks had been uprooted, and the smaller shrubbery was rent, and torn, and trampled. The wind sighed over a Forsaken Garden, in which even Hope seemed to lie dead.

But the darkest hour comes before the dawn. The morrow's sun broke upon a new scene—a scene of life, of throbbing activity, of strong faith, of sound healthy optimism. Liberalism awoke with the sun to find its being battered but unbroken, to feel it was good to be alive, and to realize it had a day's work to do, And it tackled the job.

"Sir Wilfrid Laurier has turned to a new task—he is primarily responsible for the new spirit pulsating through the ranks."

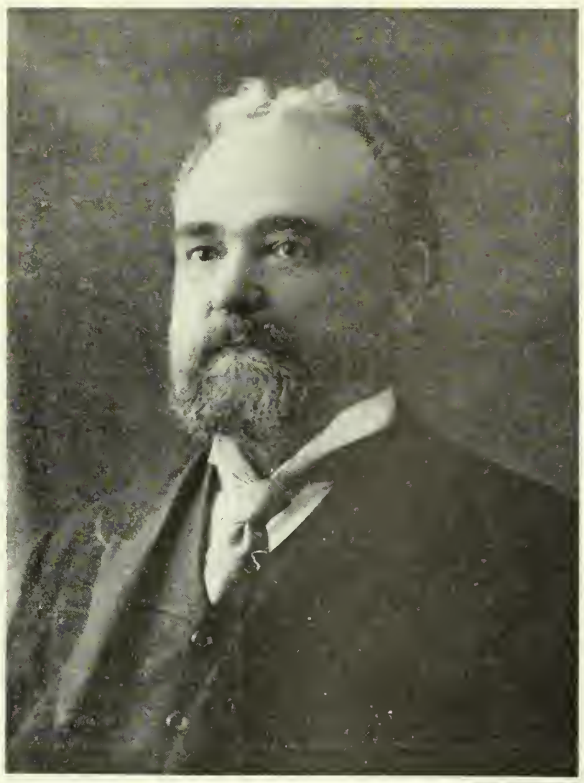
It survived the supreme test. It took its licking manfully, and "came back." The public has little use for a party, which, when beaten after holding office, sulks in its tent and gives itself the mien of a dispossessed heir. Liberalism girded its loins and came forth to its task. As it worked it learned.

So Liberalism, for the past three years, has set itself to new duties. It has not been sitting down, with its back to the engine, content to review the achievements of the past. It has rejected the sweeping character of Lord Randolph Churchill's dictum that "the business of an Opposition is to oppose." Its faith in itself is being renewed. And, whatever the effect of the change of seats may have meant to the politicians, its banishment from office for a time has done the Liberal party no harm. The fighting freedom of Opposition is developing the rank and file of its membership, and the removal of the material from its considerations of public policy is resulting in the reinstatement of the Idea.

Those who confound permanent progress with immediate results may be skeptical. All the world loves a winner. But adversity has its advantages. It is apt to do some sifting. It weeds out the weaklings and gets rid of the parasites. It develops fibre, and force, and fealty in those who remain to fight. The party has lost the man of little faith; it has been deserted by the Liberal-for-revenue-only. Much of the dead-weight has been dropped. And in the bleak shades of Opposition those who remain are growing strong. Canada, it may be unwittingly, is witnessing a renaissance of real Liberalism.

Sir Wilfrid Laurier has turned to a new task. For it is "The Chief" who is primarily responsible for the new spirit which is pulsating through the ranks. He is devoting himself to two equally congenial occupations — fighting the enemy, and developing a trained force of aggressive young soldiers. For fifteen years this remarkable Canadian devoted his powers to the general service of the country and its citizenhood. Removal from the helm of the ship of state did not rob him of his ideals, nor has his deft constructive hand lost its cunning. Those who have been following parliamentary events for the past three years do not need to be told that the veteran leader has set himself to the upbuilding of a progressive and purposeful young Liberalism; that he is using the greater time now at his disposal to lay deep and firm the foundation for the eventful national morrow on lines broad in outlook, wide in sympathy and strong in detail. Within a few weeks he transformed a discouraged remnant into an enthusiastic fighting force, the spirit of which he characterized, in the spring of 1912, as "both confident and cocky." He is developing initiative, emphasizing ideals, and giving scope to the energy and enthusiasm of youth, tempered by the wisdom of experience.

In Opposition, Sir Wilfrid Laurier has been finding men for Parliament and the party. He is allotting every private in the ranks something to do. He is taking counsel with them all. He finds them ready and willing. The result is that, while there are fewer Liberals in Parliament than there have been for some years past, there seem to be more. Formerly the responsibility was with the Chief and his Ministerial colleagues. Now every man has an individual respon-



Dr. Pugsley—"grave, serene and dignified—Dr. Pugsley is a man of parts—so many parts, in fact, that on a memorable occasion they turned a minority of fifty into a majority."

sibility. It is a capital conception of effective working Opposition. There are no dullards. Everybody has a job—and is on the job. And the happenings are building bone, and sinew, and virility.

Yonder in the back benches have been discovered real men—big men, better men, in fact, than some of those who have in the past cluttered the counsels of the party. The day of the sleepy, stoical voting-machine is gone. No longer does he put in his time reading the papers, writing constituents and answering the division bell. He has something to do now. He has a stake in the game. And things seem worth while.

To the grave, serene and dignified man who sits at his right hand, the Opposition leader is indebted for skilled and useful co-operation in the creation of this new condition. Canada's Parliament, like all other governing bodies in modern democratic civilizations, is subject to the excellent constitutional tenet of majority rule. Thus when, after some 250 consecutive hours of conflict, a parliamentary minority gains its point for the time being over a parliamentary majority, there must be some unusual circumstance, something out of the ordinary. There was. The Something Out of the Ordinary was William Pugsley, Doctor of Laws, and erstwhile Premier of the maritime province of New Brunswick. Dr. Pugsley is a man of parts—so many parts, in fact, that, on a memorable and historic occasion, they turned a nominal minority of fifty into a majority.

It was not till he found himself in Opposition, with real fighting to be done, that Dr. Pugsley displayed those qualities which have made him the idol of his associates. His was the surpassing ability, his the courage, his the endurance, his the indomitable spirit that maintained the long aggressive struggle against the passage of the Naval Aid bill of eighteen months ago. For seventy-two hours in one stretch he remained in, or within instant call, of the Commons chamber, guiding the Opposition attack in which many of the young back-benchers first "found" themselves. Every weapon of parliamentary usage, everything that human ingenuity could devise to block the adoption of the measure, Dr. Pugsley brought into play.

One morning about two o'clock, Premier Borden dug up a precedent from a musty volume on parliamentary procedure, and raised a point of order, which, if sustained by the Speaker, would have overcome all opposition then and there. Dismay was written plainly upon the faces of the Liberals when the Premier made the point.

Sir Wilfrid Laurier had gone home, Dr. Pugsley was not in the chamber, and no one else seemed to understand what the question really meant. A messenger was rushed for Pugsley, who was sleeping on a lounge in one of the Liberal rooms. Some one got up to "kill time" till he arrived, but in less than two minutes the member for St. John walked into the House, the personification of coolness and urbanity. Confidence was immediately restored among the young fighters who had been holding the Opposition fort.

"Will my right honorable friend be so good as to send me his authority for the extraordinary point he has raised?" asked Dr. Pugsley, in his softest tones. The big volume was sent across the floor, and for a minute or two he was lost between its pages.

The next moment and he was upon his feet, smiling. He had found the weakness in the Prime Minister's armor, and, with unerring aim, he pierced it. A long, legal duel ensued, but in the end Mr. Borden, great lawyer and constitutionalist that he is, realized that his attack had been repulsed. Resourceful Pugsley had saved the day again! Was it any wonder that the young Liberals in caucus next day gave him a demonstration of affection such as is rarely bestowed upon a fighter in the ranks?

Immediately back of his leader sits the Chief Whip of the party. He links the old with the new. No one has been a more forceful factor in the change which is coming over young parliamentary Liberalism than F. F. Pardee, of West Lambton. He enjoys, in a peculiar intimate sense, the confidence of the veterans and the cordial camaraderie and fellowship of the younger members. Old and young swear by "Fred." Leaders may enunciate policies; orators may keep Hansard going; members may cheer, and supporters may counsel, but it is this young man —still in the early forties—who, in the final analysis, must be responsible for the perpetual parliamentary battle. Let him miscue, make a strategic blunder or slip a cog in his organization and temporary disaster must overtake his party. Other men may devote themselves to propaganda and policy; he must likewise concern himself with the technique of the contest. Other members may fill their assignments dutifully and relinquish care with a light heart; he must follow each rumor, investigate every feature, take

William Martin, of Regina, has been called the "Lloyd-George of the Prairies." Young Martin has made the battles of the West his own.

counsel with advisers, dominate and regulate procedure, give guidance in any situation, and assume responsibility for the whole plan of campaign.

The job is harder than it looks. On the Chief Whip rests the duty of carrying out the policy determined upon by the party. He must be an expert tactician; shrewd, resourceful, possessing a keen understanding of the situation and all its possible complications, and, withal, an intimate knowledge of mankind. In any parliamentary crisis the strain on the two Chief Whips is tremendous. They are playing chess with one another twenty-four hours in every day, sleeping or waking. It is true that each has at his service a staff of assistant Whips, one or more from each province, but it is upon the shoulders of the Chief Whip that the main burden rests—a battle of wits between two parliamentary strategists; a contest between two men. Betting on the result of any embroglio is betting on the respective capabilities of Pardee and his Government rival, John Stanfield.

Both are popular with the membership. They have to be. They must be men of iron, but they must wear the velvet glove. They must have a cordial smile for everyone and a sympathetic ear for every grievance, real or imaginary. They must cultivate teamwork and allot each unit his part. In the present Parliament, Pardee is the aggressor, while Stanfield is upon the defensive. They are well mated. There is a characteristic dash and daring about Pardee, and an equally typical caution about Stanfield. Pardee may pick the battleground. He may make a bold frontal attack, or he may unexpected carry out a sortie. Stanfield must always be prepared to meet an emergency. It is a game of parliamentary chess. A good move may mean big advantage; a false move an awkward situation. Fred Pardee is a lawyer and lives at Sarnia, Ontario. He is a graduate of the University of Toronto and Osgoode Hall. In politics he has already made his mark, and is destined to keep a famous name to the forefront of Liberalism. With him is associated as assistant Whip from Ontario, Duncan C. Ross, son of the late Sir George W. Ross, and also Archie McCoig, of West Kent, and "Johnnie Angus" McMillan, of Glengarry. These three young Scots are turning the back benches into parliamentary forces, and developing the stuff of which future cabinet ministers will be manufactured.

William Erskine Knowles, of Moose Jaw, is a radical by temperament He has come into his own in opposition.

"George W. Kyte is true to his Irish ancestry. . . He is full of ideas, of originality, of humor, of energy—and of fight. . . . He is always ready—and eager—to jump into the melee. . . . His friends swear by him; his enemies swear at him. . . . He is a great man to have—on your side."

In every soundly-constructed and workable piece of locomotive mechanism there must be driving force and brake. Both are essential. It is true that the function of the latter may be less spectacular than that of the former, but it is none the less important. It is protection against a runaway. It regulates and defines progress on safe lines.

Among the rank and file of the younger Liberalism, Hugh Guthrie, of South Wellington, is the brake. The freedom of Opposition and its lack of direct responsibility has a tendency to develop either of two things, mere negation, or daring trail-blazing. With the present Opposition, any danger which might arise would be wholly from the latter. A brake doesn't come amiss, and Guthrie supplies the brake.

He is built for the job; quiet, observant, strong. There is nothing theatrical about him. He does not pose. He is devoid of affectation. He is no demagogue, and he doesn't practise the arts of popularity. He will not be stampeded. He studies a situation before he deals with it, and even the enthusiasm of "the boys" will not carry him along until he is satisfied to go. He is invaluable going down hill—as most brakes are.

But Guthrie is no pedant. His mind is open to fresh impressions. He listens to all, examines all, and advocates what seem to him the most practical improvements. And when he goes forth to war it is like Thor of the Thunder Hammer sallying forth from Asgard to do battle with the mud giants. His enemy is not the Government, it is their administration; his force is not hurled against men, but against things; his battle is not with performers, but with performance. When Hugh Guthrie fights he fights a cause.

THE RADICAL WESTERNERS.

The Great West is radical, democratic, sure of itself, assertive of its rights. Even in Parliament the prairie provinces reveal their sentiments in their representatives —thorough-going, sturdy, vigorous, down-thumping fellows, most of them. They have inhaled the atmosphere of the big out-of-doors; they have fought their way among fighters. None of the subtleties of the more delicate, circuitous diplo-

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Rabbits—A Business For the Boy

Golden Fawns Bring Fifteen Times the Price of Production, a Promising Trade With Other Varieties

By JOHN T. BARTLETT

This article should be of interest to every boy and every parent in Canada. The monetary returns of the business, attractive as they are, are not the only advantages. The education derived from watching and caring for the animals and the business instinct developed through earning and handling money of his own, will be lasting benefits. The writer gives here an interesting sketch of the popular breeds and their care, and how to work up trade in pet stock.

THIS article on "Rabbits, a Business for the Boy," is not written, primarily, because the boy should have a business, which he should, but because there is now a real opportunity for wide-awake Canadian boys in rabbit-keeping. This opportunity, which follows the reaction of the Belgian hare boom, is something new. The supply of rabbits and hares for pets no longer meets the demand, and the demand is increasing much faster than the supply.

In British Columbia, where the writer is located, it is nearly impossible to secure even passing good stock in Belgians; Flemish Giants are almost unknown; Golden Fawns bring fifteen times the price of production; and the only common breed, the white pink-eyed Polish, sells without a pedigree for $3.50 and $4 a pair. The 1914 directory of the B.C. Poultrymen's Association, an organization under Government patronage which blankets the province, contains the names of but twelve Belgian breeders, one Polish breeder, and one breeder of Flemish Giants. Three of these are located on Vancouver Island, one in Vancouver, three in the Fraser Valley, six in the Okanagan, and one in Kamloops. These are not, of course, the only rabbit- keepers in the province—there are scores of others. The pertinent fact is that of them all only fourteen have stock in any numbers for sale.

If the boy's choice is the Belgian hare, he can obtain good parent stock in Canada, but the other varieties, except possibly Flemish Giant and Polish, he will have to import from the Old Country. Importing seems a formidable undertaking, but in reality it is not, and it should not be a deterrent. English poultry journals, containing scores of breeders' cards, featuring every variety, can be secured at the booksellers. Let the lad pick his variety and then order either two bucks and four does of three-months-old stock, or of old stock a buck and two does, the latter in litter to other than the buck purchased.

For the benefit of the novice, who generally knows only the Belgian hare by its correct name, it is necessary to briefly describe the various varieties of rabbits. The most common is the Polish, the white fellow with the pink eyes, easily bred and easily cared for. He makes an ideal pet for children. The Himalayan differs from the Polish in that his tail, ears, nose and feet are black. The Angoras also have pink eyes, but their body color may be white, blue, fawn or grey. This breed requires an immense amount of attention, and for that reason is not considered especially suitable for boys.

The Lops are a variety with extraordinarily long ears. They require a great deal of care. Far from common in Canada, this variety has been much developed in England, some specimens having ears twenty-two inches in length.

Hardy varieties ready for exploitation in this country are the Dutch and the Silver Tribes. The Dutch is a smart little fellow, distinguished by a wedge-shaped white mark up the face, called the blaze, a white belt around the body, called the collar, and white spots, called the stops, on the hind feet. The principal color is steel grey, light grey, black, blue or tortoise. The Silver Tribes are divided into three classes, the grey, the fawn and the brown. They are short plump rabbits, with large, bright eyes.

With the English rabbit, markings are of paramount importance. The body is white, with blotches of color appearing here and there.

The grey Flemish Giant is advertised in Canada next to the Belgian hare. He is a large rabbit, sometimes weighing sixteen pounds, and in color and general appearance is inclined to be plain, even coarse.

A year after the purchase of his parent stock, the boy, if he has been conscientious, will be able to sell young stock in quantities.

The Golden Fawn rabbit resembles, except in color, the Belgian hare. In the Western States he has proved popular for table use. There are several fancy varieties of rabbits now being bred in the Old Country, but the introduction of these by boys is not advisable.

Before the arrival of his stock, the prospective rabbit-keeper should have his hutches prepared. These need not conform to any published plans, but they must be roomy, well-ventilated, dry and sanitary.

The fecundity for which rabbits are noted must not beguile the rabbit-keeper into thinking the bunnies require little care. Many a keeper, through carelessness, has found his pets exemplifying subtraction much more than multiplication. Cats do damage occasionally, but are easily controlled. Rats will kill young rabbits and throw the whole rabbitry into confusion. Vigilance must be exercised constantly to keep the rodents away from the premises, poison being resorted to if necessary.

Rabbits are heir to a host of diseases, most of which are of uncommon occurrence when housing conditions are reasonably good. Cleanliness, good ventilation and correct feeding are the three essentials. The treatment for rabbit diseases varies, and when a rabbit betrays any unusual symptoms he should be segregated and the advice of an experienced rabbit-keeper sought.

Rabbits may be fed three times a day, but do not require, except in the case of Lops and does in young, more than two meals. Seven a.m. and seven p.m. are good feeding hours, but whatever hours are chosen should be rigidly adhered to. The keeper, governed by local conditions, must work out his own feeding ration. Moist food, a bran mash or the like, and oats, are found very satisfactory in the morning, with green food and hay or clover at night. It is well to feed roots occasionally. Proper green food is found in dandelions, chicory, parsley, lettuce, cabbage, carrot tops, clover, pea-shells, grass, celery tops, and other similar green vegetation. Green food must never be fed when stale, sour, or wet.

In this short article, it is impossible to give more than a few general rules regarding breeding. The buck should be strong and healthy, bright-eyed, broad-chested, straight-limbed. His markings and other characteristics will vary with the variety. Does should not be bred until six months old, and then not more than five times a year. If allowed to, they will bear a larger number of litters, sometimes as many as ten, but the doe loses thereby

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Doubling Farm Returns: By ANDREW McTAGGART

A young apple orchard near Kamloops with a potato crop between the rows. No waste of land or labor.

Many Farmers Make Only Hired Men's Wages, Because They Do Not Figure Out the Costs and Make Their Investments Work for Them

The writer of this article lives in a group of farmers who are noted for their business methods and for their fat pocketbooks. These farmers farm as a business, making their farm values and farm investments pay them dividends. They also expect to get some gains from their ability to manage successfully. Hence such discussions as these at their Farmer's Institute meetings are in the nature of things most likely to take place.

The inspiration of the article will be food for every farmer in all the provinces of the Dominion. It will be noted in the cost estimate that the farmer gets back the rent of the land, the charges for working the land and the greater part of the costs of marketing. In fact the farmer as laborer, manager, salesman and overseer receives most of that $51.50 potato costs. This, nevertheless, is no more than he could earn as a day laborer. He wants something more as a reason for the use of so much capital and the expenditure of so much time and energy. Too few farmers think they are making big money when they get back the interest on their money invested. Such a farmer would have a better time if he bought bank shares with his money and sat tight. Therefore these articles are wholesome reading.

A HOPEFUL sign of the new agriculture came into evidence the other day at one of the Farmers' Institute meetings when a farmer who is doing things on a large scale asked how many present could give the cost of marketing an acre of potatoes. Various sums were suggested. The speaker went on to say that a friend of his had told him that he had taken in last year over fifty dollars per acre from his potato field. The friend had added to the speaker, "I tell you that is going some." The speaker added, "I have figured it out and I am prepared to say that I am not getting anything more than laborer's wages till I get more than fifty-five dollars an acre from my potato field. What I get above that in returns I call my profit over and above laborer's pay." The statement was received with evident signs of incredulity by many of his listeners. "Very well, let us figure a bit. I'll take your figure for it," agreed the speaker. Here was the way it figured out:

POTATO COSTS.

Rent of land or its equivalent	$ 4.00
Fertilizing	7.00
Plowing	3.00
Cultivating and harrowing	1.50
Seed (about fourteen bushels)	12.00
Planting (done with a planter)	2.00
Scuffling	2.00
Hoeing	1.00
Spraying etc.	2.00
Digging	8.00
Marketing	10.00
Total	$51.50

It is interesting to note that this table presupposes that the farmer had average success in his planting. No allowance is made for frost or for bad seed. It is not an uncommon thing, it must be remembered for frost to cut down the first planting and thus to necessitate a second expenditure for seed. Further, it assumes good weather, such weather as allows the preparation of the soil to go forward without interruption. Not unfrequently a heavy rain renders necessary a second or even third disking or harrowing. All of which adds to the expense of getting the potatoes to market.

Again, the amount of cultivation here accounted for presupposes land that is clean and in good heart for the potatoes. The basis of the calculation was good clover sod. If the land were dirty there would be occasion for at least a second plowing and an additional disking. Throughout the season the work would require more attention and hence additional cost. Moreover, the use of the potato-planter is mentioned. It is not hard to see that a saving is affected by the use of this machine. Taking it one year with another, the price of raising and marketing an acre of potatoes is not far from fifty-five dollars per acre.

COST OF GROWING OATS.

Then there is the case of an acre of oats:

Land	$ 4.00
Plowing	4.00
Sowing	.50
Seed (ordinary, at market price)	1.00
Cutting	1.00
Drawing in	1.00
Cleaning and marketing	2.00
Cutting	2.00
Spudding and picking weeds and disinfecting	1.00
Total	$16.50

Supposing this farmer has a crop of sixty bushels to the acre he may have the good luck to sell at forty cents per bushel. He will then have an aggregate of twenty-four dollars per acre. His profit above his labor will be about seven dollars and fifty cents per acre. This again presupposes no set-backs and no losses from hail or frost or blight or fire.

These figures suggest a number of interesting considerations. One is that it means a very considerable handicap for a farmer to miss a crop. His cultivation involves a deal of labor that must give returns or the farmer loses very heavily. One has to do but a little figuring to discover the loss that ensues upon the freezing out of a field of potatoes, the destruction that is made in a farmer's welfare by potato blight. When hail or pelting rain knocks down a farmer's oat field it knocks the bottom out of his profits to say the least, and not infrequently means actual loss, for the farmer must lose when his expenditure exceeds his returns.

Still another deduction is the folly of attempting to cultivate land that does not give a reasonable prospect of yielding large crops. A stump or a stonepile in the middle of a field or a large boulder, all have ways of adding to the cost of tillage, and, of course, where they are no harvest grows. There is the further matter of weeds. These foes eat into the farmer's profits at an alarming rate. Many a farmer loses more by weeds than would pay for an additional hired man for the summer months. The field that is clean of weeds and free of obstructions, that is well drained and in a high state of fertility requires less time for cultivation than the field that is dirty and soggy and wet. In fact, only the fields that are up to a high standard of fertility and cultivation are to be depended upon to yield satisfactory profits.

Further, anyone can see the folly of selling the grain from a farm to any considerable extent. Even when this is done at a profit, it is not hard to see there is a limit to the extent that this can be done. Hence the necessity of feeding the grain on the farm, and thus securing the profit from the grain and, in addition, the profit from the cattle feeding and the added fertility from the manure. Taking it all in all, there is nothing that will take the place of barnyard manure for soil feeding.

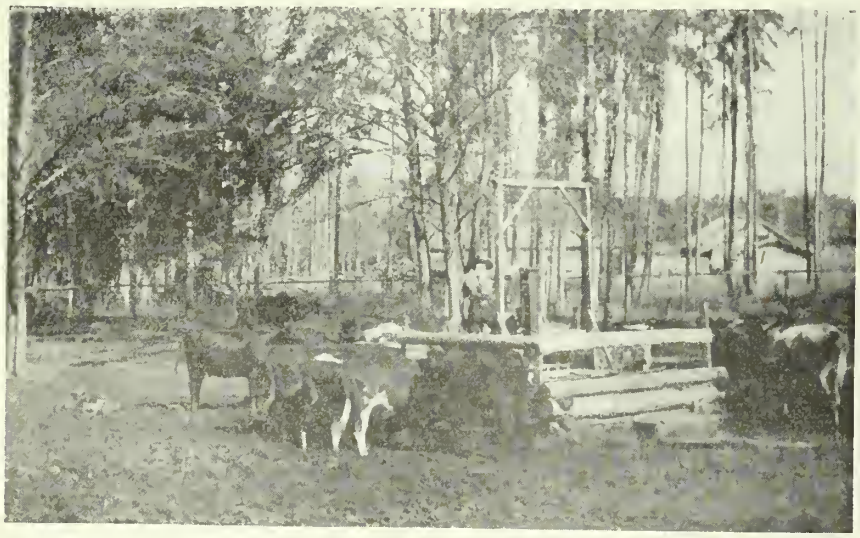
But by far the most important feature of all this is the fact that the farmers of Canada are getting at their work in a business way and are looking at their work from the business man's point of view. The day was, when farming was described as working hard all day and doing chores all night. It is now looked at as a matter of business and unless there is profit realized the wideawake agriculturist gets out on a job where he can make good. There is just as much romance as ever in the field and the purling brook, but the modern farmer does not pretend to live on sweet odors or sweet sounds. He enjoys these quite as much as any poet in existence, but he keeps his eye on the fields and expects it to yield a sum that will swell the sides of his pocketbook. Bookkeeping will never take the place of sweat, but it will when well done, prevent the useless expenditure of hard labor. Perhaps the farmer never will be able to get his finances to the fine point to which the banker or the hardware merchant have brought their respective businesses, but he is approximating thereto a little more closely every year. And in this lies his hope.

The old haphazard way of counting up by seeing at New Year's how much he is "ahead" or "behind" is a thing of the past. Often from the gain so accounted should be taken the toil of his sons and daughters, to say nothing of a reasonable depreciation of his general farm equipment. The farmer who is at the same time master of business principles, pays attention to details, and is able to tell whence come his gains or his losses. As far as can be he divides his farm into departments and knows what each department contributes to the farm's loss or gain. Like many a grocer or hardware man who made a like discovery, prosperity has dawned for the farmer when he learned the lesson of localizing dynamics.

A great handicap experienced by the farmer hitherto has been the fact that his field yielded him but one profit in the year. When he had harvested the season's crop the money invested in his fields was idle for the remainder of the year. Lately he has practised the method of inducing the field to yield him two crops and by the use of additional crop to add to his year's income and to the fertility of his land. Here is the method: As soon as the grain is harvested, if the field is not seeded down, it is plowed with a broad-shared plow and sown to rape or a mixture of vetches and rye, or some such quick-growing cover crop, and left for a month or six weeks to grow. In the meantime the local sheep-dealer has been seen and a flock of sheep are either bought or the field rented for pasture purposes. The sheep clean up everything in sight in the way of weeds, and give the land an ideal manuring. By the time they are ready for market, the field has been cleaned and is ready for plowing. Anyone who has observed the condition of a field so treated has been impressed by the amount of humus and first-class manure that has been added. In addition to the added fertility, the farmer has the additional income from the sheep, an amount that is almost found money. The main cost was a little foresight. This is one way of securing a second return from the money invested in the field.

Again, as crop-growing is a highly expensive operation, it is important that when grown it should be of the best possible variety. In view of this the farmer is finding out what his soil is specially adapted to and sowing accordingly. Further, he is doing all he can to discover any deficiencies in the constituents of his soil and trying to correct them. In other words, he is applying the principle of the balanced ration to his soil, to his advantage in every way. The man who is after a high grade quality of grain sees the folly of adding to his soil what will add to the straw, but which will have no effect in increasing the quantity or the quality of the grain.

In other words, the farmer has discovered that his time and efforts have a commercial value and he has resolved to secure an equivalent for both when he expends them. He is doing his own thinking. He has done this all along as a producer. He is steadily extending his thinking to marketing and purchasing. Articles that may be bought in large quantities, such as coal and flour and bran and corn, he and his neighbors are uniting to purchase by the carload lots, much to his own advantage and the satisfaction of the local dealer who is quite content to act as agent in such transactions. The discovery has been made that farming has a business side as well as a producing side. The farmer has a business that has rules of its own, though the arm-chair critic may not always see them. The farmer is finding these out for himself, for when we find farmers sitting down to figure out the cost of production we may be sure that all the other reasonable ways and means that have contributed to the building up of the successful manufacturer in other walks of life will soon contribute their quota to the farmer's financial triumph.



Mixed farming is making a headway in Alberta. A scene in the pines, fifty miles north of Edmonton.

Spanish Gold

By GEO. A. BIRMINGHAM
Illustrated by DUDLEY WARD

The Story of a Search for Treasure on the Coast of Ireland and the Amusing Situations which Arose

SYNOPSIS OF PREVIOUS CHAPTERS

The Rev. J. J. Meldon, curate of Ballymoy, a village on the west coast of Ireland, while visiting his friend, Major Kent, comes across an old pocket-book of the Major's grandfather, in which he finds an account of some treasure, supposed to have been hidden by the Spaniards of one of the vessels of the Spanish Armada, on the Island of Inishgowlan. The Major possesses an excellent yacht, The Spindrift, and they decide to take a trip to the island and search for the treasure, which Meldon is very confident of finding, but of the existence of which the Major is very skeptical. Meldon also owns a yacht, The Aureole, a worthless tub, which he lets to a Mr. Langton, who, with a friend, wishes to take a trip round the coast. On arriving at the island Meldon and the Major find Higginbotham, an old college chum of Meldon's, engaged in surveying the island for the Government, and dividing it up into allotments. He informs them he is prevented from completing his work by the obstinacy of one old man, named Thomas O'Flaherty Pat, who owns a piece of land in the very center of the island, entirely surrounded by other people's land, but with which he will not part at any price. Meldon, not wishing to divulge the real reason of his visit, tells Higginbotham the Major is a Government mineralogical expert who has been sent to examine and report on the island's mineral resources. Meldon and the Major start to explore the island and discover they are being followed everywhere by an old man, who turns out to be Thomas O'Flaherty Pat, and who declares he cannot understand a word of English. Meldon tells him they are naturalists looking for sea beetles, and manages to get rid of him; continuing their search, they find an inlet with a hole, which is only visible at low tide, and here Meldon decides the hidden treasure must lie. On returning to the yacht they notice the arrival in the harbor of the Aureole. The following day Meldon starts for the inlet and the cave, and on his arrival discovers a man, who is being lowered over the cliff to the entrance of the cave. This turns out to be a Sir Giles Buckley, the friend who is with Langton, on the Aureole, and a son of a neighbor of the Major's, who had lately died. Sir Giles would also have heard of the treasure, as his grandfather was a friend of the Major's grandfather, and had visited the island with him. After some discussion, Sir Giles calls out to Langton to haul him up, and both he and Meldon depart, as the tide has nearly covered the hole in the rocks. The following day, Meldon, having set adrift Sir Giles' boat to prevent his leaving the yacht, again visits the cave with the Major. They make their way through a long underground passage and eventually find two old iron boxes which, however, are empty. At this point Langton and Sir Giles appear on the scene through a hole in the top of the cavern which it seems is just under Thomas O'Flaherty Pat's plot of land. Disappointed, they all return to the yachts, and find that the Government yacht has arrived in the harbor with Mr. Willoughby, the Chief Secretary, on board. Willoughby lands to visit Higginbotham, and Meldon follows. Higginbotham in vain tries to dissuade Meldon from seeing Willoughby, who is much incensed at Meldon's tale of the geological survey, but Meldon insists, and we here find him in the midst of a conversation with Willoughby, who is beginning to be amused at his good-humored nonsense. Afterwards Thomas O'Flaherty Pat approaches Meldon secretly and tells him that he has found the treasure and, being afraid of the neighbors and Sir Giles, he wants the clergyman to take charge of it for him. He takes Meldon that night to his house and shows him the treasure hidden under the stones of the hearth. They have been followed by Sir Giles and Langton, who attack them in the dark and, overpowering them, tie up both O'Flaherty and Meldon. The latter is left alone and manages to roll into the next field.

CHAPTER XVI. Continued.

"THOMAS O'FLAHERTY PAT," said Meldon. "That's the man he means—you know, Higginbotham."

"And tell him——" went on Mr. Willoughby.

"If you're to tell him anything," said Meldon, "don't forget to take someone with you who understands Irish."

"And tell him," repeated Mr. Willoughby, "that I shall expect him here in about an hour to meet Father Mulcrone."

"I see," said Meldon. "So that's where the yacht's gone. You've sent for the priest to talk sense to the old boy. Well, I dare say you're right, though I think we could have managed with the help of Mary Kate. She knows both languages well, and she'd do anything for me, though she has rather a down on Higginbotham. It's a pity you didn't consult me before sending the steamer off all the way to Inishmore. However, it can't be helped now."

Higginbotham departed on his errand and shut the door of the hut after him. The Chief Secretary turned to Meldon.

"You've chosen," he said, "to force your company on me this afternoon in a most unwarrantable manner."

"I'll go at once if you like," said Meldon. "I only came up here for your own good, to warn you about the state of Higginbotham's bed. You ought to be more grateful to me than you are. It isn't every man who'd have taken the trouble to come all this way to save a total stranger from getting his legs cut with broken glass. However, if you hunt me away, of course I'll go. Only I think you'll be sorry afterwards if I do. I may say without vanity that I'm far and away the most amusing person on this island at present."

"As you are here," said Mr. Willoughby, "I take the opportunity of asking you what you mean by telling that outrageous story to Mr. Higginbotham. I'm not accustomed to having my name used in that way and, to speak plainly, I regard it as insolence."

"You are probably referring to the geological survey of this island?"

"Yes. To your assertion that I employed a man called Kent to survey this island. That is precisely what I do refer to."

"Then you ought to have said so plainly at first, and not have left me to guess at what you were talking about. Many men couldn't have guessed, and then we should have been rambling about at cross purposes for the next hour or so without getting any further. Always try and say plainly what you mean, Mr. Willoughby. I know it's difficult, but I think you'll find it pays in the end. Now that I know what's in your mind, I'll be very glad to thrash it out with you. You know Higginbotham, of course?"

"Yes."

"Intimately?"

"I met him this afternoon for the first time."

"Then you can't be said really to know Higginbotham. That's a pity, because without a close and intimate knowledge of Higginbotham you're not in a position to understand that geological survey story. Take my advice and drop the whole subject until you know Higginbotham better. After spending a few days on the island in constant intercourse with Higginbotham you'll be able to understand the whole thing. Then you'll appreciate it. In the meanwhile I'm sure you won't mind my adding, since we are on the subject—and it was you who introduced it—that you ought not to go leaping to conclusions without a proper knowledge of the facts. I said the same thing this morning to Major Kent when he insisted that you had come here to search for buried treasure."

Mr. Willoughby pulled himself together with an effort. He felt a sense of bewilderment and hopeless confusion. The sensation was familiar. He had experienced it before in the House of Com-

mons when Irish members of both parties asked questions on the same subject. He knew that his only chance was to ignore side-issues, however fascinating, and get back at once to the original point.

"I'm willing," he said, "to listen to any explanation you have to offer; but I do not see how Mr. Higginbotham's character alters, or can alter, the fact that you told him what I can only describe as an outrageous lie."

"The worst thing about you Englishmen is that you have such blunt minds. You don't appreciate the lights and shades, the finer nuances, what I may perhaps describe as the chiaroscuro of things. It's just the same with my friend Major Kent. By the way, I ought to apologize for him. He ought to have come ashore and called upon you this afternoon. It isn't the want of loyalty which prevented him. He's a strong Unionist, and on principle he repects his Majesty's Ministers whatever party they belong to. The fact is he was a bit nervous about this geological survey business. He didn't know exactly how you'd take it. I told him that you were a reasonable man and that you'd see the thing in a proper light, but he wouldn't come."

"Will you kindly tell me what is the proper light in which to view this extraordinary performance of yours?"

"Certainly. It will be a little difficult, of course, when you don't know Higginbotham, but I'll try."

"Leave Mr. Higginbotham out," said the Chief Secretary irritably. "Tell me simply this, were you justified in making a statement which you knew to be a baseless invention? How do you explain the fact that you told a deliberate—that you didn't speak the truth?"

"I've always heard of you as an educated and cultured man. I may assume therefore that you know all about pragmatism."

"I don't."

"Well, you ought to. It's a most interesting system of philosophy quite worth your while to study. I'm sure you'd like it if you understood it. In fact, I expect you're a pragmatist already without knowing it. Most of us practical men are."

"I'm waiting for an explanation of the story you told Mr. Higginbotham."

"Quite right. I'm coming to that in a minute. Don't be impatient. If you'd been familiar with the pragmatist philosophy it would have saved time. As you're not—though as Chief Secretary for Ireland I think you ought to be—I'll have to explain. Pragmatism may be described as the secularizing of the Ritschlian system of theological thought. You understand the Ritschlian theory of value judgments, of course?"

"No, I don't." Mr. Willoughby began to feel very helpless. It seemed easier to let the tide of this strange lecture sweep over him than to make any effort to assert himself.

"Do you mind if I smoke?" he said. "I think I could listen to your explanation better if I smoked."

He took from his pocket a silver cigarcase.

"Smoke away," said Meldon. "I don't mind in the least. In fact I'll take a cigar from you and smoke too. I can't afford cigars myself, but I enjoy them when they're good. I suppose a Chief Secretary is pretty well bound to keep decent cigars on account of his position."

Mr. Willoughby handed over the case. Meldon selected a cigar and lit it. Then he went on—

"The central position of the pragmatist philosophy and the Ritschlian theology is that truth and usefulness are identical."

"Eh?"

"What that means is this. A thing is true if it turns out in actual practice to be useful, and false if it turns out in actual practice to be useless. I dare say that sounds startling to you at first, but if you think it over quietly for a while you'll get to see that there's a good deal in it."

Meldon puffed at his cigar without speaking. He wished to give Mr. Willoughby an opportunity for meditation. Then he went on—

"The usual illustration—the one you'll find in all the text-books—is the old puzzle of the monkey on the tree. A man sees a monkey clinging to the far side of the trunk of the tree.—I never could make out how he did see it, but that doesn't matter for the purposes of the illustration.—He, the man, determines to go round the tree and get a better look at the monkey. But the monkey creeps round the tree so as always to keep the trunk between him and the man. The question is whether, when he's gone round the tree, the man has or has not gone round the monkey. The older philosophies simply gave that problem up. They couldn't solve it, but the pragmatist——"

"Either you or I," said Mr. Willoughby feebly, "must be going mad."

"Your cigar has gone out," said Meldon. "Don't light it again. There's nothing tastes worse than a relighted cigar. Take a fresh one. There are still two in the case, and I shall be able to manage along with one more."

"Would you mind leaving out the monkey on the tree and getting back to the geological survey story?"

"Not a bit. If it bores you to hear an explanation of the pragmatist theory of truth I won't go on with it. It was only for your sake I went into it. You can just take it from me that the test of truth is usefulness. That's the general theory. Now apply it to this particular case. The story I told Higginbotham turned out to be extremely useful—quite as useful as I had any reason to expect. In fact, I don't see that we could have very well gone on without it. I can't explain to you just how it was useful. If I did, I should be giving away Major Kent, Sir Giles Buckley, Euseby Langton, and perhaps old Thomas O'Flaherty Pat; but you may take it that the utility of the story has been demon-

Mr. Willoughby made an effort to rally. He reminded himself that he was a Cabinet Minister and a great man, that he had withstood the firiest eloquence of Members for Munster constituencies and survived the most searching catechisms of the men from Antrim and Down. He called to mind the fact that he had resolutely said "No" to at least twenty-five per cent. of the people who came to him in Dublin Castle seeking to have jobs perpetuated. He tried to realize the impossibility of a mere country curate talking him down. He hardened his heart with the recollection that he was in the right and the curate utterly in the wrong. He sat up as well as he could in the hammock-chair and said sternly—

"Am I to understand that you regard any lie as justifiable if it serves its purpose?"

"Certainly not," said Meldon; "you are missing the whole point. I was afraid you would when you prevented me from explaining the theory of truth to you. I never justify lies under any circumstances whatever. The thing I'm trying to help you to grasp is this: A statement isn't a lie if it proves itself in actual practice to be useful—it's true. There now, you've let that second cigar go out. You'd better light that one again. I hate to see a man wasting cigar after cigar, especially when they're good ones."

Mr. Willoughby fumbled with the matches and made more than one attempt to relight the cigar.

"The reason," Meldon went on, "why I think you're almost certain to be a pragmatist is that you're a politician. You're constantly having to make speeches, of course; and in every speech you must more or less say something about Ireland. When you are Chief Secretary the other fellow, the man in opposition who wants to be Chief Secretary but isn't, gets up and says you are telling a pack of lies. That's not the way he expresses himself, but it's exactly what he means. When his turn comes to be Chief Secretary and you are in opposition, you very naturally say that he's telling lies. Now that's a very crude way of talking. You are, both of you, as patriotic and loyal men, doing your best to say what is really useful. If the things you say turn out in the end to be useful, why, then, if you happen to be pragmatists, they aren't lies."

Mr. Willoughby stuck doggedly to his point. Just so his countrymen, though beaten by all the rules of war, have from time to time clung to positions which they ought to have evacuated.

"A lie," he said, "is a lie. I don't see that you've made your case at all."

"I know I haven't, but that's because you would insist on stopping me. If you'll allow me to go back to the man who went round the tree with the monkey on it——"

"Don't do that. I can't bear it."

"Very well. I won't. I suppose we may consider the whole matter closed now and go on to talk of something else."

"No. It's not closed," said Mr. Wil-

loughby with a fine show of spirited indignation. "I still want to know why you told Mr. Higginbotham that I sent Major Kent to make a geological survey of this island. It's all very well to talk as you've been doing, but a man is bound to tell the truth and not to deceive innocent people."

"Look here, Mr. Willoughby," said Meldon, "I've sat and listened to you calling me a liar half a dozen times, and I haven't turned a hair. I'm a man of remarkable self-control and I appreciate your point of view. You are irritated because you think that you are not being treated with proper respect. You assert what you are pleased to call your dignity by trying to prove that I'm a liar. I've stood it from you so far, but I'm not bound to stand it any longer and I won't. It doesn't suit you one bit to take up that high and mighty moral tone, and I may tell you that it doesn't impress me. I'm not the British public, and that bluff honesty pose isn't one I admire. All those platitudes about lies being lies simply run off my skin. I know that your own game of politics couldn't be played for a single hour without what you choose to describe as deceiving innocent people. Mind you, I'm not blaming you in the least. I quite give in that you can't always be blabbing out the exact literal truth about everything. Things couldn't go on if you did. All I say is, that being in the line of life you are, you ought not to set yourself up as a model of every kind of integrity and come out here to an island which, so far as I know, nobody ever invited you to visit, and talk ideal morality to me in the way you've been doing. Hullo! There's Higginbotham back again. I wonder if he's brought Thomas O'Flaherty Pat with him. You'll be interested in seeing that old man, even if you can't speak to him."

Higginbotham started as he entered the hut. He did not expect to find Meldon there. He was surprised to see Mr. Willoughby crumpled up, crushed, and cowed in the depths of the hammock-chair, while Meldon, cheerful and triumphant, sat on the edge of the table swinging his legs and smoking a cigar.

"You'd better get that oil stove of yours lit, Higginbotham," said Meldon. "The Chief Secretary is dying for a cup of tea. You'd like some tea, wouldn't you, Mr. Willoughby?"

"I would. I feel as if I wanted tea. You won't say that I'm posing for the benefit of the British public if I drink tea, will you?"

It was Meldon who lit the stove and busied himself with the cups and saucers. Higginbotham was too much astonished to assist.

"There's no water in your kettle," said Meldon. "I'd better run across to the well and get some. Or I'll go to Michael Pat's mother and get some hot. That will save time. When I'm there I'll collar a loaf of soda-bread and some butter if I can. I happen to know that she has fresh butter because I helped to make it."

Mr. Willoughby rallied a little when the door closed behind Meldon.

"Your friend," he said to Higginbotham, "seems to me to be a most remarkable man."

"He is. In college we always believed that if only he'd given his mind to it and taken some interest in his work, he could have done anything."

"I haven't the slightest doubt of it. He has given me a talking to this afternoon such as I haven't had since I left school—not since I left the nursery. Did you ever read a book on pragmatism?"

"No."

"You don't happen to know the name of the best book on the subject?"

"No, but I'm sure that Meldon——"

"Don't," said Mr. Willoughby. "I'd rather not start him on the subject again. Have you any cigars? I want one badly. I got no good of the two I half-smoked while he was here."

"I'm afraid not. But your own cigarcase has one in it. It's on the table."

"I can't smoke that one. To put it plainly, I daren't. Your friend Meldon said he might want it. I'd be afraid to face him if it was gone."

"But it's your own cigar! Why should Meldon——"

"It's not my cigar. Nothing in the world is mine any more, not even my mind or my morality or my self-respect is my own. Mr. Meldon has taken them from me and torn them in pieces before my eyes. He has left me a nervous wreck of the man I once was. Did you say he was a parson?"

"Yes. He's curate of Ballymoy."

"Thank God I don't live in that parish! I should be hypnotised into going to church every time he preached, and then—— Hush! Can he be coming back already? I believe he is. No other man would whistle so loud as that. If he begins to ill-treat me again, Mr. Higginbotham, I hope you'll try and drag him off. I can't stand much more."

Meldon was struck on the head from behind and rolled over senseless on the floor. "I've settled the curate," said Sir Giles Buckley." "Have you got hold of the old man?"

Sir Giles pitched forward and fell—The bag burst open and the contents were scattered broadcast.

CHAPTER XVII

MELDON flung open the door of the hut and entered. He at once took possession of the remaining cigar and lit it.

"I met Mary Kate," he said, " and I sent her on with the kettle. By the way, Mr. Willoughby, have you such a thing as half a crown about you?"

The Chief Secretary plunged his hand into his pocket and brought out a number of coins, gold and silver.

"Take it all," he said; "I don't feel as if I should ever want money any more."

"Thanks," said Meldon. "I'll take half a crown. It's for Mary Kate. As a rule I only give her sixpence at a time, but she naturally expects more when she's fetching water for a Chief Secretary's tea. Higginbotham generally gives her sugar-candy."

Meldon's grin and the look of embarrassment on Higginbotham's face hinted to Mr. Willoughby of a joke behind.

"I wish," he said, "you'd tell me about Mary Kate and the sugar-candy."

"Oh, that story's hardly worth telling," said Meldon. "It was only that she nearly had the face ate off Higginbotham one afternoon."

"She ate his face! But surely——"

"He wasn't trying to kiss her, if that's what you're thinking of. Higginbotham's not that kind of man at all. Besides, she's quite a little girl, though remarkably intelligent. No. There was some slight understanding about some sugar-candy between her and Higginbotham. Both of them came to me and complained. I did what I could to set the matter right. You've not been troubled about it lately, have you, Higginbotham?"

"No; it's all right now."

"Is that all I'm to be told?" said Mr. Willoughby.

"There's really nothing more to tell, and besides I want, while I think of it, to warn Higginbotham about the condition of his bed. I happened to spill some broken glass and a few oars on to your bed this morning, Higginbotham. It doesn't really matter about the oars. You'd be sure to notice them as you got in, but you might not see the glass. What I advise you to do is to take the blankets and things outside the door and shake them well before you go to bed."

"I don't suppose it would be any use of my asking," said Mr. Willoughby; "but I should greatly like to know how you came to strew Mr. Higginbotham's bed with oars and broken glass."

"I don't think it would interest you much," said Meldon.

"I assure you it would. I can't even imagine circumstances under which it would be any temptation to me to put oars—of all things in the world—and broken bottles into another man's bed."

"It wasn't broken bottles. It was a broken window-pane. The circumstances were these: This morning I wanted to conceal some oars——"

"From?"

"From their owners, and——"

"Oh, from their owners. I see. Stupid of me not to have guessed. Please go on."

"From their owners, who would, or at all events might, have made a very bad use of the oars if they had been able to get at them. Very well. I naturally thought at once of Higginbotham's bed."

"I don't see why you say 'naturally.' It doesn't seem to me at all a natural place to think of. I'm sure I should never have thought of it."

"It doesn't much matter in this case what you would have thought. Higginbotham's bed was the place I thought of at once; and I am still of opinion, in spite of anything you say, that it was a good place. I couldn't open the window, so I smashed it. That's the whole story. I don't suppose it's as good a one as you expected. But you would have it."

"It's better than I expected," said Mr. Willoughby, "and I'm much obliged to you for telling me."

There was a gentle tap at the door. Meldon jumped down from his seat on the table and took his cigar out of his mouth.

"That's Mary Kate, I expect, with the hot water."

It was Mary Kate. She entered the room with a sheepish grin on her face. In one hand she carried a kettle of hot water, in the other hand a loaf of soda bread. The kettle was a good deal the heavier burden of the two, and she had evidently carried it first in one hand and then in the other. Its handle had some flour on it. The bread was mottled with black off the kettle.

"That's a good girl," said Meldon "Here's half a crown for you. How much money is that you have now altogether?"

"It's four shillings," said Mary Kate.

"There," said Meldon, "I told you she was an intelligent child. Now listen to me, Mary Kate. The reason you're getting half a crown this time is that the gentleman over there in the chair is the Chief Secretary. Do you know what a Chief Secretary is?"

"I do not."

"Well, I haven't time to explain it to you now; but if you come up here tomorrow to Mr. Higginbotham he'll tell

Continued on Page 75.

The Canadian West is going into sheep as far as funds will permit. This flock is taken in Manitoba.

Thirty Lambs on an Acre

Value of the Rape Crop as an Adjunct to the Regular Pastures

By JOHN MacDONALD

The producing of a second crop from the land in one season is a decided advantage in successful farming. Where livestock are kept, it is the aim of every progressive farmer to increase the number of animals he can keep on his farm without extra expenditure for labor. The growing of a crop of rape enables this to be done. This Nova Scotia writer gives some timely information.

RAPE is a most valuable feed for stock, especially sheep. It is greatly relished, and produces rapid gains both in growing and fattening stock. Rape is an easy crop to grow, and yields abundantly when properly handled. The variety of rape most suitable to grow for fodder is the Dwarf Essex. This yields very heavily of leaves.

Early sowing is not essential for rape. It is well to have the land ready for sowing as soon as the ground is warmed up in the spring. It may be sown any time before the last of July, and after the ground is well warmed. When rape is sown in rows, cultivation should commence as soon as the line of plants can be distinctly seen from one end of the row to the other. The cultivator should run at first as near as possible to the plants without burying them. Shallow but thorough cultivation should follow at regular intervals. The crop may be pastured off at various stages of its development, according to the object caught. When eaten down before it has made a maximum growth, it will grow up again with more or less vigor. But the pasturing should not commence in any event until the rape has become well established in the soil, that is to say until it has made a growth of several inches.

It is a question as to whether more food is obtained by this method than by allowing the rape to make its full growth by pasturing off. Authorities on the subject are inclined to believe that the latter method is the most profitable to follow, especially when sheep pasture on it, as it is possible for sheep to eat it down so low as to injure its capacity for further growth. It may be pastured off with cattle, sheep, swine or fowls. Cattle waste more by trampling than do the other classes of stock mentioned. Milk cows should not usually be allowed to pasture on rape as it has a tendency to taint the milk, but it may be cut and fed to them after each period of milking. On the whole, sheep will do better on rape than will either swine or cattle. Neither cattle nor sheep should be turned on rape when very hungry or when the crop is wet with dew or rain, as they are liable to over-eat and bloat, which, in a short time if not looked after will cause death. In most climates such as that of New England or Eastern Canada there is greater danger from bloating than there is in the arid or semi-arid districts of the West. Cattle and sheep become accustomed to rape by turning them into the field after they have eaten freely of some other food, and then leaving them in the rape field. The danger will be still further decreased by leaving them only a short time on the rape the first day, and gradually increasing the time on each succeeding day. At the end of the week they may be allowed to remain on the rape, having access at the same time to an adjoining grass pasture. Animals that have not been accustomed to a rape pasture may not take to it at first, but they soon learn to like it, and once they acquire a taste for it, they will thrive on it and never tire of it.

AN ADJUNCT TO GRASS PASTURES.

If livestock are pastured on rape, it is generally considered beneficial to the animals to give them access to a grass pasture. And especially is this true if the grass has lost part of its succulence through age, as it then has a tendency to lessen a too lax condition of the bowels. The grass and rape will keep the sheep in first-class condition.

Oats fed once a day at the rate of one-half pound per head each day will have the same effect, but it is not considered necessary to feed grain to sheep or any other stock when pasturing on rape with a view to putting on fat for a good stamp of rape is generally sufficient to fatten them. Stock should have a free access to salt when pasturing on rape, and should always be supplied with fresh water.

But when sheep are feeding on rape they will be found to consume very little water. Sheep turned into a rape pasture that is neither very tall nor very dense will first consume the leaves because of their succulence. They will finally eat all the stems down to the ground, but if the rape be very tall and thick they will eat it all up as they go. The stems are considered even better than the leaves. When the leaves, in a thin stand, have been eaten off by sheep, cattle may then be turned on the field, and they will clean up all the remaining stems. By this method there will be far less loss from trampling than if they had been introduced at an earlier period.

On soils in which the hoofs of sheep do not sink below the surface, this class of stock may be pastured on rape until the closing in of winter and in warm latitudes may be pastured all through the winter. In climates having cold winters such as we have here in Eastern Canada, it should be pastured off before the arrival of severe frosts, as after rape has been frozen, and until the stems have become brittle enough to break easily, its value as pasture is much impaired. When the early frosts have covered the rape with rime, sheep should be given a feed of oats or other suitable grain before being turned on it. In the absence of such food sheep

New Zealand has a thriving export trade with South America. Forty Romney Marsh lambs ready for shipping.

must not be allowed on it until after the frost has lifted, otherwise serious digestive troubles may arise.

When sheep eat so excessively of rape or any other food as to induce bloating, relief must be immediately given or the animals will almost certainly die. Therefore, a trocar should always be at hand. The moment that a case of bloat is detected, the animal should be tapped to allow the gas to escape. This is done by slipping the trocar into the paunch on the left side and somewhat low in the triangular or fleaky between the last rib and the hip. Medicine is seldom of any avail.

The usual method of sowing rape is in drills, and cultivate as for other roots till the leaves get too large to allow passing between the rows. Some advocate and practise sowing rape with corn at the time of last cultivation; others sow it with oats when the plants are about two inches high. It is well to know whether one's condition of soil and climate will allow of such methods before undertaking them on a large scale. The only way to know this is to sow a few experimental plots and the one to give the best yield is the one most suitable.

Sowing in rows from two to two and one-half feet apart and cultivating as for turnips or mangolds, is the method used for large productions of seed. Rape being a very gross feeder requires a soil rich in plant food. Soil suitable for corn will be found to be good for rape. A man having lambs to fatten can grow no better crop than rape, nor one from which the quality of the flesh will be better. Rape-fed lamb or mutton has a finer flavor than any other. An acre of rape will fatten thirty lambs for a month and the gain in weight will run from eight to twelve pounds per head. Rape-fed mutton will always have that proper inter-mixture of fat and lean meat so much desired by those who cater to the first-class trade in our larger cities and towns.

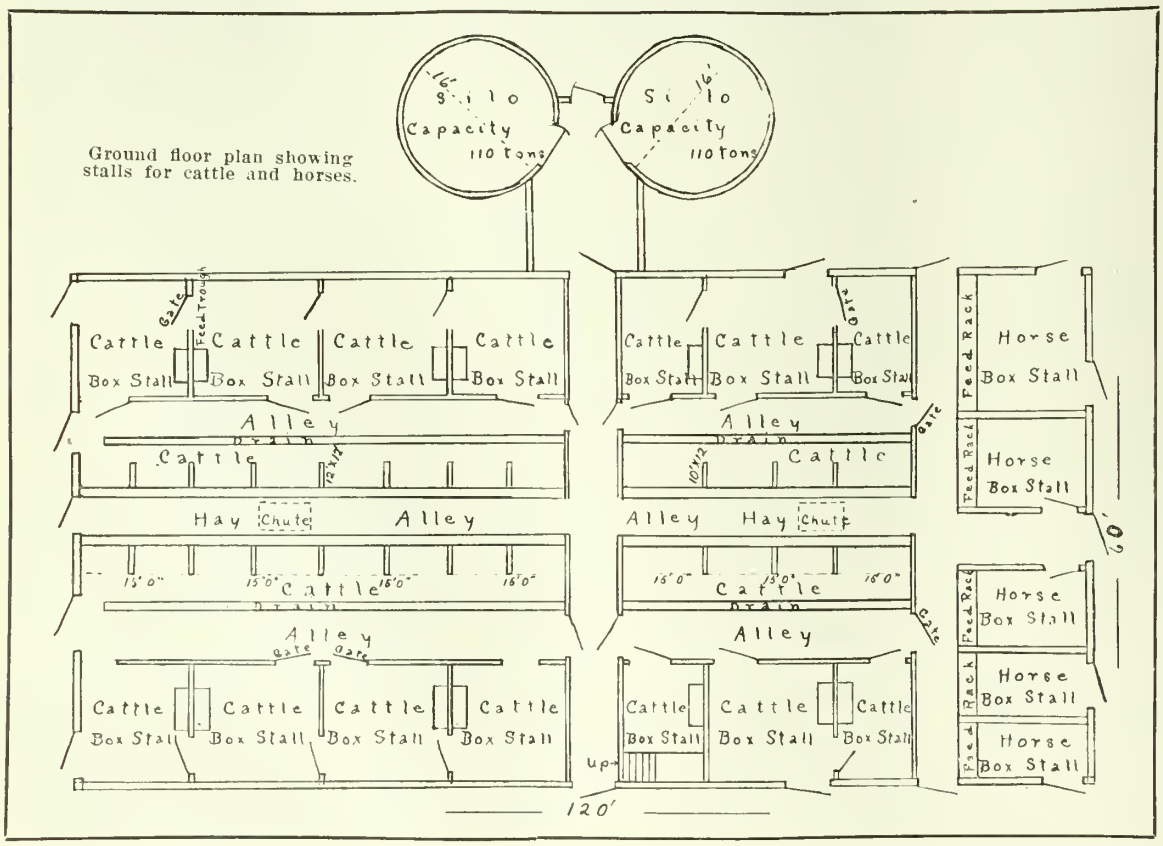
A Modern Barn for Horses and Beef Cattle

By E. S. KELLY

HAVE you any definite idea of what sort of a barn you want. Have you carefully considered first your means, then your needs, then the needs of years to come? Is it your idea to build a small cheap barn that will hold a few tons of hay, the grain, a few cows, the working horses, a colt or two, the farm machinery, the chickens and ducks? If that is your idea think whether it is economy to shelter farming tools on the barn floor, which means that they are endlessly in the way and that they have a shed costing ten times what one would cost designed especially for such a purpose. No farmer can afford to build a barn with such a small storage capacity for forage that he will be compelled to fill it in summer and then re-fill it again and again during the winter and spring, drawing hay from the stacks, damaged in quality and at double the expense of putting it directly where it is to be used.

There is this thought to consider when building a barn: building is one of the great events that come far apart. After a new barn is built it is not likely that one can afford to add to it or build another for many years. Build, then, of sufficient size and capacity to allow for a reasonable growth and expansion of not merely farm crops but farm animals. Provide ample room for the storage of forage. Sheds may be cheaply constructed to surround the barn and these sheds will shelter the stock and may be added at any time, but the storage room of the mow is a fixed quantity when the rafters are put on.

Diagram shows a plan of barn in which there are stalls for cattle and horses on ground floor.



Ground floor plan showing stalls for cattle and horses.

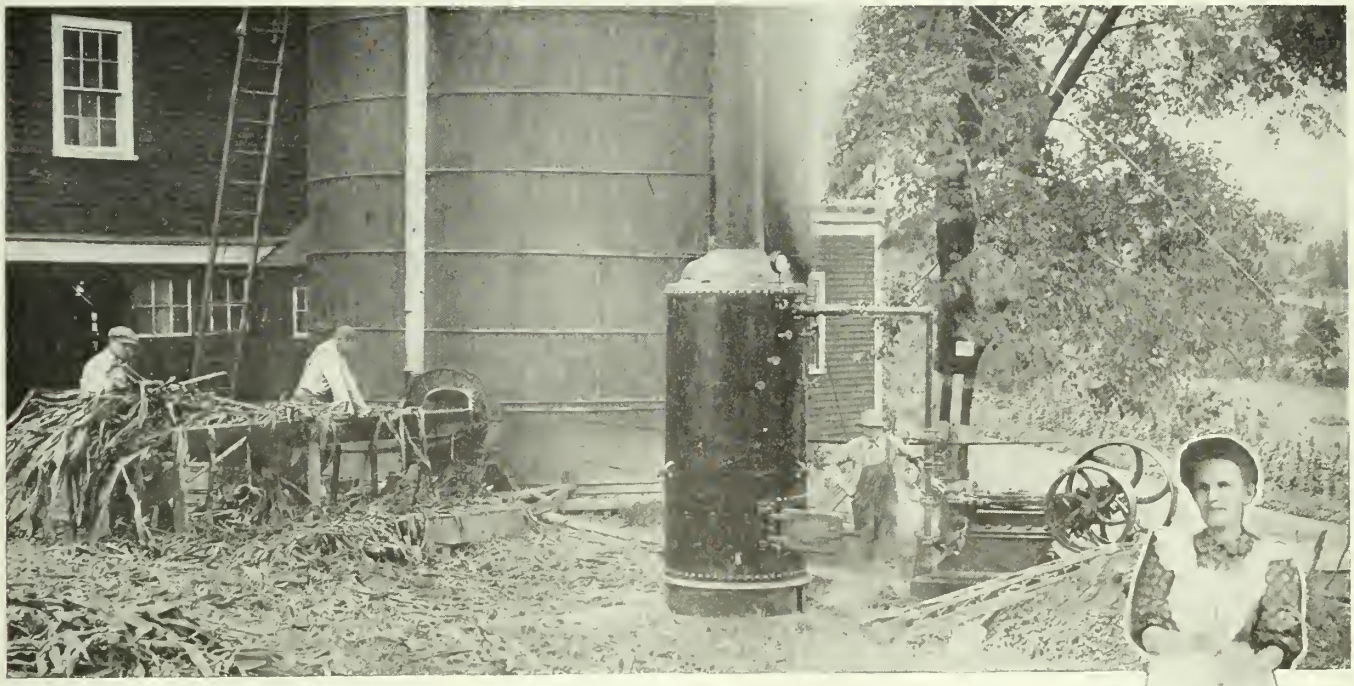
Making It Easier

The Farmer's Wife Has Solved a Big Problem of Economy When She Learns to Save Herself

By ETHEL M. CHAPMAN

I'VE always been a little proud of belonging to the social order modernly known as the "farm woman." Whether our efforts for generations have been haphazard and "inefficient," and the monotony of our existence sufficient to arouse the sympathy of every soul who stands off and looks at us through a stage glass, still we never could be called "non-producers," and I doubt if after all any other class of women have got more out of life or put more into it. But the thing we haven't learned yet is how to save ourselves. We have experts working out the problems of the conservation of forests and mines and soil—even the conservation of children, but when it comes to the conservation of farm women, no one but farm women themselves can devise workable ways and means.

"Back to the land!" This is a popular cry raised often by agitators who want someone else to do the going back. The profits of the soil, the machinery that works tirelessly, the science that makes certain the reward of labor, are inviting enough, but what about the woman in the farm home? They do not mention the loneliness and the days full of toil, because these have been largely responsible for the drift to the cities. The only way to turn the drift back is to put the woman of the farm on an equality with the woman of the city—an equality of labor. Given that, her position is an enviable one.



Any farmer who can afford a gasoline engine should make provision for hitching it to the churn and other household machinery.

A NEW PROGRAM.

For the demands on the time and ability of the farmer's wife are peculiar, and many, and insistent. As a rule she does her housework and cares for her children without help. Very often she does the family sewing, bakes the bread, cures the meat, churns the butter, tends the garden, and boards the hired men as well—a pretty full program. The first question is how much can be cut out. It's a very fine art this cutting out the dispensables and leaving time for the things more worth while, and those that must be done.

There are still a few women who do all the family sewing from the children's white dresses to the men's blue shirts—and do the most of it after the rest of the family are in bed. Our mothers did this because there was no other way of getting it done, but it is seldom necessary now. If it costs too much to have a dressmaker in the house for a week or two every spring and fall, there are ready-to-wear garments which are really very good now-a-days, and are often cheaper than the home-made things, especially in underwear and house dresses. Even if you live some distance from the city, with the facilities of the parcel post and the co-operation of your local dealer, the shopping problem is not difficult. Of course you may have an aversion to wearing store clothes, or you may consider the departure an extravagance, at first; but there are other things more important. If half the time spent in sewing were given to canning a supply of home-grown vegetables instead of giving the family an occasional treat of tinned goods, when the growing things are out of season, the difference in satisfaction and money would soon balance the right way. Better still, when the afternoons spent bending over a tedious piece of insertion and frills or running a sewing machine are

given to open-air work in a kitchen garden, the woman has more to show for her time in health and good spirits as well as in the material product. Too many farm tables lack the wholesome vegetables and fruit which they might have in abundance just because no one has time to tend to the garden.

A KITCHEN PLAN TO SAVE STEPS.

But however wisely we plan to eliminate the non-essentials there is a certain amount of work that must be done every day. The only way the housekeeper can save herself is to do it in the easiest way possible. We read a lot about motion-saving in doing certain pieces of housework, and it all sounds like so much theory until you make your own plan to suit your own kitchen. Then there is something in it.

Did you ever try to calculate the number of miles you travel in doing the ordinary kitchen work for one day—especially if your kitchen is large, with the sink at one end, the stove at another and the cupboard removed as far as possible from both? If you care enough for arithmetic to try this, then begin again and see how greatly the result is reduced when the worktable, with a supply cupboard above it, is placed close to the cellar door, or dumb-waiter (if you are so fortunate as to have one), the range just a few steps from the table, and the sink with a wide drainboard a few feet from the range. When you begin to prepare a meal, the raw material is brought from the cellar, or refrigerator to the table. If you want to make a cake, open the cupboard door, and your sugar, spices, etc., are right before you with the utensils in a compartment at one side. (Of course, if you have a kitchen cabinet this arrangement is already planned out for you). When the cake is mixed one step takes it to the oven, and another carries the soiled dishes to the sink. The cupboard for dishes should be just over the drainboard and the drainboard always to the left of the sink for a right-handed worker. This is what we call good routing. It isn't possible to arrange every kitchen just as we want it, but neither is it necessary to have the working equipment so scattered that the "getting things together" is harder than the actual work.

FAMILY CO-OPERATION.

And because farm mothers have not yet learned to take thought for the conservation of themselves, they do not get enough help from the rest of the household. The line is too distinctly drawn between "men's work" and "women's work" of if it wavers at all it generally dips the wrong way. Of course if a man is brought up to think it effeminating to swing a washer you can't do much with him, but you can start your own boy right, and it won't make a sissy of him either. Even the daughters sometimes grow up with a very superficial idea of the work their mothers have always done. The mother knows how hard her work has been and with characteristic unselfishness and a good deal of wisdom, wants her daughter to have a good time while she can—but she goes too far. Her hands may be less white and small if she learns how to can fruit and make butter, but in later years whether she becames a farmer's wife, or a doctor, she will always profit by the experience.

CITY CONVENIENCES IN THE HOUSE.

The woman on the farm will always have a busy life. She wouldn't be happy if it were otherwise, but with modern conveniences and equipment there need be no more drudgery about the work in a farm house than in the most up-to-date city flat. In the first place every house should have a convenient, comfortable kitchen, because the average woman spends seventy per cent. of her time there. This doesn't mean that the equipment should include every new paring-machine or potato-masher that comes on the market, but the ideal kitchen in a farm house should have every convenience that will save time or steps or labor or fuel, in that particular home. If it won't do this, there is no excuse for buying it. Before installing any "labor saver" the woman who is to use it should settle the question of whether it is really going to help her, whether it is scientifically constructed, comfortable to use, easy to keep clean, and also whether its appearance will add to the attractiveness of the kitchen. This prevents stocking up with useless tools, and half the strain of housework is due to poor tools and working at tables, sinks, ironing-boards, etc., which are too low or too high—usually too low for the worker.

About the best help a country woman can have is a gasoline engine—unless electricity has been carried to the farm. For the same price as a self-binder a gasoline engine can be installed which will turn the cream separator and washing-machine and force water into a pressure tank in the cellar or a gravity tank on the roof. "But the expense!" you say, and to the average woman this means a great deal. The mortgage is quite as much a nightmare to her as it is to her husband. In any case he knows that even with a mortgage it pays to build a silo or buy a potato planter, and any farm that can afford a silo can afford a bathroom and septic tank sewage disposal system. Any farm that can afford a cream-separator can afford a washing machine. Any farm that can afford pumping and storage facilities for the livestock can afford running water in the house. Any farm that can afford a manure spreader or potato planter can afford a vacuum cleaner and dustless mop and long-handled scrubber. Because it pays in the long run to make the home a good place for a woman to live and work, and be happy, and where children can grow up to learn to love farm life. A few farmers are beginning to see the crisis approaching, when they will either have to remove the family to town, or bring the essential things of the town to the family.

THE WAY YOU LOOK AT IT.

Then a great deal of the conservation of our energies depends on the attitude we take to our work. Some sociologists tell us that the majority of farmers' wives are overworked and discontented; others claim that most of the wives in the city are idle and discontented. We don't believe either. But if the woman in town is discontented with her lot because she is not contributing anything to the productive world, and because marriage might be regarded as a burden by the poor man in the city; then the farmer's wife should be decidedly happy because marriage is almost an economic necessity for the poor man on the farm. Housework would lose much of its so-called monotony if reckoned at its trade value. Some of us regard it as an ogre that just has us and we can't escape; to others it is something distasteful to be disposed of as quickly as possible; others accept it as a sort of martyrdom but won't give it up. They just scour and scrub and bake, then sigh and begin all over again. A few find the real joy and dignity in it but realize that home-making means something more than just housekeeping. It doesn't wear on these women (that is if they don't get too much of it); they have found the prime secret of accomplishing a great deal and conserving themselves.

For after all home-making, and particularly country home-making, is the broadest profession a woman can enter. She doesn't move along circumscribed lines like the teacher or nurse or business woman. She has abundant scope for her heart and head as well as her hands, but the thing she has yet to learn is how to fill the place without wearing herself out. A study of self-conservation would be decidedly worth while for every country Women's Institute or Homemaker's Club.

BECAUSE THEY KNOW

If she were here
To take my hand, and ask, "What is it dear?"
She would not see the wrinkles on my face,
Nor note the silver where the gold had place;
Upon my faded lips she'd leave a kiss,
And whisper, "Darling," and she would not miss
The vanished rose; or, if she did, would say,
"How you have ripened since I went away!"
The blemishes which others might despise
Would still be beautiful in Mother's eyes.

If she were here,
She would not mind the changes. If a tear
Should fill my eye I know that she would see,
And give sweet consolation unto me;
Yet in her heart some things would little heed,
Knowing how much their discipline I need,
And so, I think, though Heaven be not far,
And friends can see us even as we are,
They may be glad, like loving motherhood,
Because they know how all things work for good.

—*In the Ladies Home Journal.*

On the Fighting Line in Riel's Day

2—Gabriel Dumont and the '85 Outbreak

By REV. R. G. MacBETH, B.A.

Author of "The Making of Canadian West," etc. and formerly Lieutenant No. 1 Company, Winnipeg Light Infantry

AT the close of our first article we had reached the point where Riel, coming to take up the case of the discontented half-breeds on the South Saskatchewan in 1885, discovered in Gabriel Dumont a man well suited for the post of warpath leadership under him.

Gabriel Dumont is worthy of special notice. As nearly as the different conditions of their surroundings would allow the comparison, he was a man of the type of Cronje and had all the courage and dogged tenacity that distinguished the remarkable Boer. But Dumont was a noted man amongst his own people years before the rebellion brought him prominently before the outside world. In those days of prairie travel the place where a river was crossed was as distinctive as a railway junction point is in our time, and "Gabriel's Crossing" of the South Saskatchewan, called after the noted frontiersman, was one of the best known points on the long trail between Fort Garry and Prince Albert. And before he settled there he had a wide reputation for daring exploits in the freelance period of the old prairies days. Broad-shouldered, deep-chested and powerfully built, accustomed from childhood to the open-air life of the great plains, trained in all the love of the adventurous, possessed of prodigious muscular strength, he had extraordinary influence over the primitive people to whom these things mean much, because they are the conditions of success in their manner of life. A daring rider and a dead-sure shot, he was always in the front in the furious rush of the buffalo hunt and when in camp or by the council-fire, these qualities, with a great native shrewdness of mind, gave him acknowledged leadership amongst the native tribes and men of the half-blood.

Gabriel Dumont.

With such a fighter at his call, Riel felt that he could commence hostilities and was keen-witted enough to see that his best chance lay in sudden action. Making his headquarters at Batoche, called after another well-known plainsman, Riel began by looting the stores of the Kerr Brothers and others on March 18th, and putting the owners thereof under arrest.

Major Crozier, a gallant officer of the Mounted Police, in command of a few men of that famous force at Fort Carlton, not many miles away, was keeping an eye on the situation, though very few thought that the malcontents under Riel would actually take up arms. But men who knew Riel's previous record should have taken no chances. Crozier saw that trouble was imminent and called for volunteers from Prince Albert, forty odd miles away. Prince Albert is now a fine city, but at that time was a long straggling town on the banks of the North Saskatchewan. No place in all Canada deserves such honorable mention in connection with the rebellion era. The town was near the heart of the disaffected districts, surrounded by Indian reserves in all directions, and mercilessly exposed to attacks therefrom if the Indians should go on the warpath. Yet Prince Albert responded to Crozier's appeal by sending forty of her best citizens and, when nine of these were killed at Duck Lake, the town sent thirty more. We do not know any other such record of unselfish devotion to the cause of flag and country.

Amongst the volunteers who went at the first call from Prince Albert was Thomas McKay, a well-known and influential resident there, and a man who, having spent all his life in the West, knew the natives and their languages intimately. The McKay family did distinguished loyalist service in the rebellion time. James McKay, the present Government representative from Prince Albert and a fellow-student of mine at the time, went out from Winnipeg with the 90th, was at Fish Creek and Batoche and, on account of his knowledge of the country and the ways of the frontier, was specially employed by General Middleton as a courier and dispatch carrier. Still another brother, George, a canon of the Church of England, was alike chaplain and scout at that time, when his services in both capacities were highly desirable.

Crozier sent Thomas McKay and Mitchell, a Duck Lake merchant, to Batoche to meet Riel and his council and persuade them to disband.

But Riel raged like a madman and cried out: "McKay, you don't know what we want. We want blood! It is blood we are after—it is a war of extermination! There are two curses in this country—the Government and the Hudson's Bay Company, and we are going to drive them out! We want blood!"

For a time it looked as if McKay's life would be taken, but the councillors all knew him, and finally he and Mitchell were allowed to go. Next day McKay and Mitchell were sent out by Crozier again to meet two of Riel's men, Nolin and Maxine Lepine (a brother of Ambroise) for a parley. McKay told them they must disband and give up their leaders, but in reply they said that Riel demanded Crozier's surrender. McKay answered that this could not be considered at all, and so the parley ended and the flag-of-truce men returned to their respective quarters.

In connection with this parley, it is worth while to refer to a matter which indicates what a strange and erratic type of man Riel was. When McKay told Nolin that Major Crozier would not surrender and that there was no use discussing the question, Nolin said that he had a letter which he was told to hand to McKay, but that it would be of no use now if Crozier was not to surrender. This letter was afterwards found in Riel's

council room at Batoche and is in the following extraordinary form:—

St. Antoine, 21st March, 1885.

To Major Crozier,

Commander of the Police at
Forts Carlton and Battleford.

Major—The councillors of the Provisional Government of Saskatchewan have the honor to communicate to you the following conditions of surrender: You will be required to give up completely the situation which the Canadian Government placed you in at Carlton and Battleford, together with all Government properties.

In case of acceptances, you and your men will be set free on your parole of honor to keep the peace. And those who choose to leave the country will be furnished with teams and provisions to reach Qu'Appelle.

In case of non-acceptance, we intend to attack you when to-morrow, the Lord's Day, is over and to commence without delay a war of extermination upon those who have shown themselves hostile to our rights.

Messrs. Charles Nolin and Maxine Lepine are the gentlemen with whom you will have to treat.

Major, we respect you. Let the cause of humanity be a consolation to you for the reverses which the governmental misconduct has brought upon you.

LOUIS DAVID RIEL,
Exovede.

And on the other side of the paper the following was written:

To Messrs. Charles Nolin and Maxine Lepine.

Gentlemen—If Major Crozier accedes to the condition of surrender, let him use the following formula and no other: "Because I love my neighbor as myself, for the sake of God, and to prevent bloodshed, and principally the war of extermination which threatens the country, I agree to the above conditions of surrender." If the Major writes this formula and signs it, inform him that we will receive him and his men Monday. Yours,

LOUIS DAVID RIEL,
Exovede.

The "provisional government of Saskatchewan" to which Riel refers in the letter is, of course, the rebel government he had constituted and the "councillors" meant the group of plainsmen he had called to be his advisers. Most of them were known to me from my childhood and none of them ordinarily could be regarded as men of lawless character. Some of them were held in high personal regard by all who knew them. But they were as a group wholly illiterate and ignorant men in regard to matters of government. The letter to Crozier was certainly a cool document for a rebel to propose to send to a man of Crozier's well-known courage, even though he had only a small force of police and citizens under his command. One can well understand that he would have paid little attention to it; but it serves to illustrate what a peculiarly puzzling and remarkable character the rebel chief was. Despite the evidence of alienists on both sides, those who knew Riel best are still perplexed in regard to his mental equilibrium.

Crozier did not know then what a solemn surrender formula the rebel chief had expected him to sign, but he did know that Riel meant business and that he had evidently secured a remarkable degree of control over his following. The fact that Nolin, one of a well-known family of respected type, and Maxine Lepine, who had been a member of the Legislature in Manitoba, could bring themselves to believe that the Canadian Government could be frightened or bluffed into getting out of the country, shows how completely Riel had his followers in the hollow of his hand.

The day after this extraordinary interview, Crozier, having sent word to Col. Irvine, his superior officer, that reinforcements would be required, sent out a few men and teams to bring in certain stores that were at Duck Lake belonging to Mitchell. They were met by some half-breeds and Indians under Dumont and Beardy, a Cree chief, whose reserve was nearby. An altercation arose, so that only for Thomas McKay, who had great influence on both sides, there would have been blood shed then. The men returned to Fort Carlton and reported, whereupon Crozier, again sending word to Col. Irvine, whom McKay had met near Prince Albert, decided to take his 100 men and move out to support the teams and bring in the stores.

This move on the part of Crozier has been discussed from that day to this and is still more or less of a riddle. Why did he not wait for junction of forces with Irvine, who was only a day distant with 100 more men? Was Crozier anxious to have the soldierly distinction of nipping the rebellion in the bud without help? Did he underestimate the strength of the enemy and their equipment, as in later years was the case with Buller in the Boer War? Or did he expect that the well-known prestige of the Mounted Police, 800 of whom had patrolled half a continent for years and kept the peace amongst 30,000 Indians, would overawe the rebels? Questions like these have always been asked, but they remain unanswered by mere human ingenuity. Can we not say, as Butler says in his great biography of Gordon of Khartoum, that He who is Sovereign Director of the universe can work out His will as well by what we call the mistakes of men as by the strength of archangels? If the battle of Duck Lake had not been fought when it was, the country might have slumbered on in ignorance of the fact that danger was imminent. If the seditious work of Riel had gone on undisclosed amongst the Indians, there might have come a general simultaneous uprising that would have let loose thousands of savages on unprotected settlements, and the sequel would have dwarfed the Sioux massacres in the Western States.

In short, the battle of Duck Lake was the ringing of the fire bell which told the whole of Canada that the West was ablaze with rebellion. It was a big price to pay for our failure to understand what had been going on; but if the bell had not rung then, the fire would have smoldered and gained a headway which would have meant years of bloodshed to arrest.

And Duck Lake was on this wise. Crozier went out with the teams and 100 mounted men, taking also a seven-pounder gun. A few miles from Duck Lake the rebel forces met them under Dumont and Chief Beardy. There was some parley under a flag of truce carried by the rebels, but Crozier feared treachery, as the Indians and half-seemed to be gradually surrounding his men. Then in a scuffle between an Indian and one of Crozier's

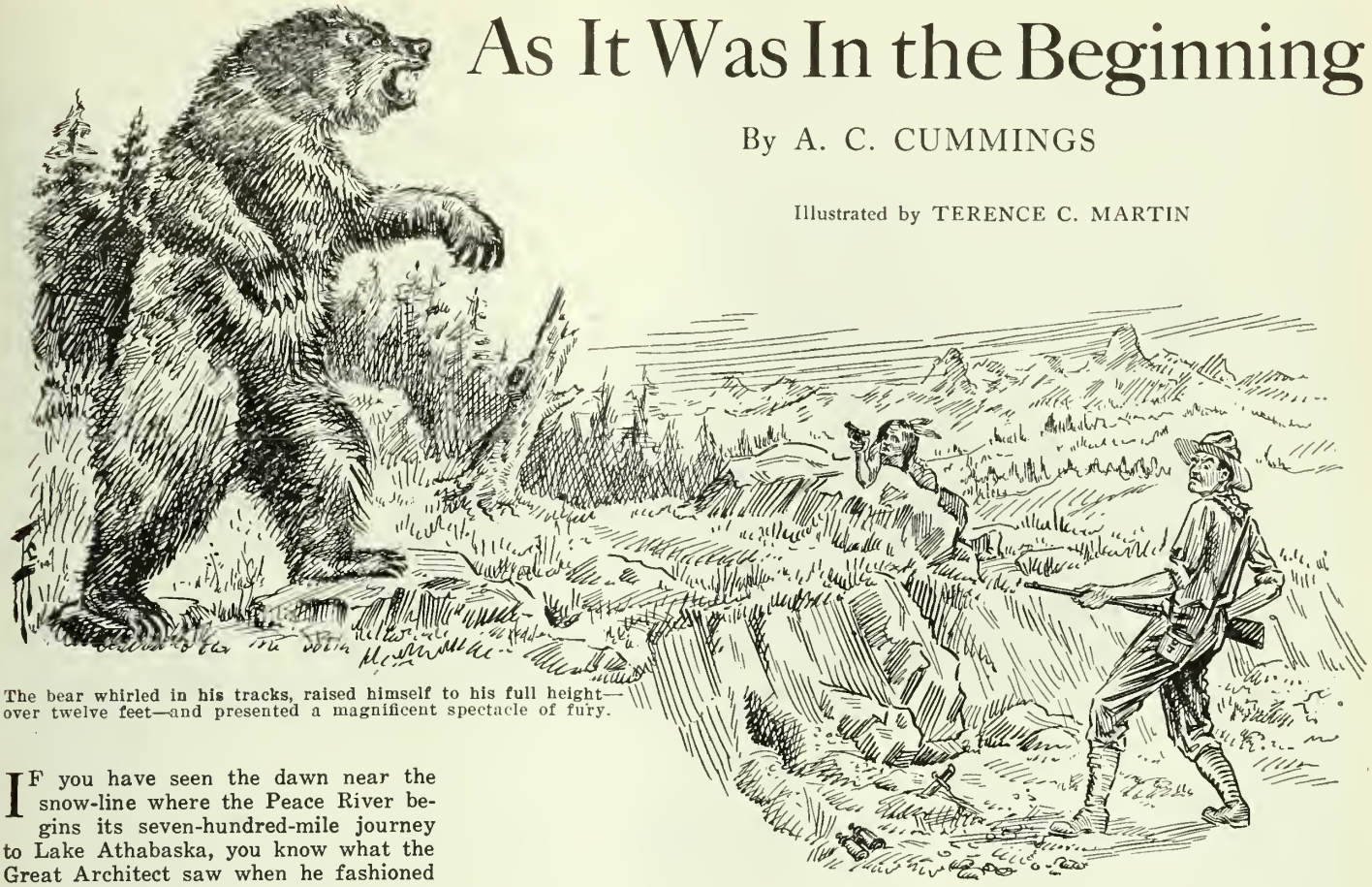
Continued on Page 54.

Reproduction of historic photograph of the second council of Riel, after their capture. The group includes practically all the best known lieutenants of the rebel leader.

As It Was In the Beginning

By A. C. CUMMINGS

Illustrated by TERENCE C. MARTIN



The bear whirled in his tracks, raised himself to his full height—over twelve feet—and presented a magnificent spectacle of fury.

IF you have seen the dawn near the snow-line where the Peace River begins its seven-hundred-mile journey to Lake Athabaska, you know what the Great Architect saw when he fashioned the world and declared it good. When you throw open the flap of your sleeping-tent to let in the air that all night has frolicked with snow on the peaks five or six thousand feet over your head, you do not rub your eyes and yawn. No, with the smell of the dew-washed earth loading the keen air which you gulp into your lungs, your senses leap into instant alertness. Then, if you have an eye for such things, you stare at the deep-blue night-sky and wait for the first flush of light that will fling the mountains into sharp relief as a negative flashes up on a photographic plate.

The change comes quickly. The snow-peaks grow more and more sharply defined; the snow itself takes on a whiter and colder tint; then a faint glow of light reaches the summits and warms them by its touch, so that in a few moments they pass from pale lemon to rose-pink and the slumbrous blue of the granite gives way to the wakeful gray of morning. A few tawny clouds ballooning overhead break into flame, and suddenly from behind one snow-shouldered peak, the sun heaves itself up gloriously; the river in the valley flushes beneath its mist-veils; and the miracle of a new day has been wrought.

When the surveyor in charge of the Government survey party rolled out of his sleeping-bag on one such morning, he did not waste a moment on the purple-tinted peaks uprearing against the sky. For one thing, he had seen the dawn break over the Rockies many times before; and for another, he was in too great a hurry to follow up the trail of a grizzly which Jimmy Charlie, the silent Indian cook of the party, had hit upon the evening before, on their way home to camp. Judging from the spoor, the grizzly was a splendid one and the surveyor was so keen to add its skin to his trophies that, when he sounded the call to breakfast, he incautiously confessed what the hour was, and had all the boots in the camp thrown at his head in consequence.

"Ye enthoosiastic Neemrod," expostulated Jock, the axeman, a muscular, red-headed, red-mustached Scotsman whose boast it was that he never got lost in any bush no matter how thick. "Ye'll be pleased tae remember that ma contrac' does nae call for sich 'arly risin'; it's nae seemly."

"If you didn't sit up so late at the fire talking predestination to Jimmy Charlie you'd be able to get up early the one morning in the week that I want to go after bear," retorted the surveyor, squinting down the barrel of his rifle between hurried bites of breakfast.

" 'Tis a wark o' grace, ye ken tae redeem yon Siwash frae the errors o' his ways," said Jock, who was noted as a theological warhorse always scenting the controversial battle from afar "For, mark me, he's fu' o' vain supersteetions, forbye he's a Christian—o' sorts. The chiel told me a queer story last night—or reyther I dug it oot o' him—something about how his forefeythers cam' frae the bears, or sich-like fulishness. It appears they worshiped animals in bygone times—what ye ca' fetishers, I tak' it."

"You should have been a professor of comparative theology at Aberdeen," said the surveyor, who secretly fomented religious strife in camp for the nightly amusement of "drawing Jock."

"Then I ken wha wad hae got lost in the bush last week, when he wad insist that the Peace River flowed westward," answered Jock, dryly.

The others of the party laughed. The surveyor's little slip was not likely to be soon forgotten.

"I'll remember that, Jock, when the bear steaks are being cut to-night. I know who hankers after the flesh-pots," laughed the surveyor, as he moved off into the bush with Jimmy Charlie in attendance.

Some hours later he was clambering over the gravel-drift along the river-bank where the remains of freshly-killed fish told of the recent presence of bear. Here Jimmy Charlie lost the trail and quested about for it in a manner that reminded his companion of a bloodhound. While waiting for him to give tongue, the surveyor leant against the gravel-bank in the shade from the hot sun. His shoulder dislodged a flint pebble and he picked it up and examined it idly.

Now there are flints and flints. There are those you use to pave your roads with and there are those which are rune-stones bearing a message across the ages for all who can read it.

The surveyor turned his find over and over in his hand. Then he unscrewed the concave glass of his binoculars and made another examination. Somehow his mind went back to the Toronto college classroom where the spectacled professor lectured to a secretly-derisive class on the

palaeolithic hatchets and arrow-heads of the Rocky Mountains.

"Shade of Boucher de Perthes," said the surveyor, softly.

Jimmy Charlie was startled a moment later by a vigorous shout. He arrived at the surveyor's side to find him delving in the ochreous gravel with his hunting-knife. To a panting request to dig he wonderingly complied and soon their combined efforts drove a large hole in the bank. Jimmy Charlie was very disgusted to find that all the hole produced were some bones, pieces of skull and a few flints.

But the surveyor whistled to himself as he pored over the remains and took in their meaning. "Now what would the old professor think of this lay-out?" he mused.

He had entirely forgotten about the bear. Jimmy Charlie's grip on his arm and his tense whisper, "Looky there," recalled him to actuality. He glanced up quickly and saw, staring him full from the crest of the gravel-ridge, a magnificent Silver-tip, his small wicked eyes full of an almost ridiculous curiosity.

Man and bear faced each other for a full second without moving. Then as the surveyor reached for his rifle, Silver-tip turned quietly and slipped away over the ridge. Just as he was dropping out of sight, the surveyor fired and the bear, whirling in his tracks with a scream, raised himself to his full height—over twelve feet—and presented such a magnificent spectacle of fury that the surveyor for an instant forbore to shoot.

His delay was nearly tragic for the whirlwind was sweeping down on him before he could get the rifle to his shoulder again.

An enfilading fusilade of revolver shots at close range checked the charge. Jimmy Charlie, behind a boulder and wild with excitement, was emptying an old army revolver as fast as he could pull the trigger. A couple of bullets ricocheted off the angle of the hard skull like pebbles along the surface of a pool, but two or three others caught the bear with sledge-hammer effect on the side of the head. Then the surveyor's rifle spoke and laid him out quivering on the bowlders.

"Gee whiz, Jimmy," said the surveyor, mopping his face, "that little Maxim gun-play of yours, I rather think, saved me some unpleasantness in this vicinity."

The camp had not nicknamed Jimmy Charlie, "Charles the Silent" for nothing. He merely grinned as he examined the kill and pointed out where the first shot had nearly broken its back.

"Indians call him the bear-that-will-not-run," he remarked at last.

After they had removed the skin, the surveyor went to cleanse himself in the river, leaving the Indian at work on the head. When he returned both had disappeared. Much puzzled he hailed the empty landscape and an answering call discovered Jimmy Charlie astride a branch at the top of a tall spruce, with the bear's head, grotesquely wrapped in pieces of red shirting, under his arm. He skilfully swept off the tree-top with his axe, impaled the head with the muzzle grinning to the naked sky, and rapidly descended, cutting off branch and bark as he came, until the tree was as smooth as the mast of a ship.

"Now what in thunder," exclaimed the amazed surveyor, "is that astonishing Siwash getting at?"

But Jimmy Charlie had nothing to say, neither had he any explanation to offer. He seemed rather ashamed of himself and plodded silently behind the surveyor, carrying the bear-meat back to camp.

"It will keep off bad uck," was all he would vouchsafe when Jock played the part of grand inquisitor after supper.

A few months later when the snow had stopped the survey, the surveyor called on the professor in his Toronto home and laid his discoveries before him. The professor measured and examined the flints and bones for a full hour before giving judgment.

"Interesting—most interesting," he said at last. "This is worth more than much fine gold. This—" and he held up a small piece of bone—"is a calavaria, or brain-cap of a Palaeolithic man, one of the very few good specimens in North America, and this—" and he fondled another bone—"is a piece of vertebrae of a cavebear. Singular thing, the head has evidently been taken off with a stone axe—there's a chip of flint in the vertebrae even yet."

"Now the man who killed that bear," added the professor, musingly, "that is, if he did kill it, must have been one of the giants of those days."

"What was the idea of cutting off the head?" asked the surveyor, deeply interested.

"Oh, it had probably some connection with animal worship. You know Captain Vancouver in his journal tells of Indians who called themselves the 'People of the Bear,' and I suppose that gives a clew to these prehistoric people. They might have considered themselves the 'People of the Bear.' One can only guess at these things, you know, but I rather fancy their respect for their ancestors did not prevent them from making a meal of them occasionally, if driven to it by hunger for instance. They would probably preserve the head with a view of appeasing the tribal spirits who might be offended at the choice of menu. I fancy if you could get some old Indian of the present day to talk to you about such matters you would get some interesting data on the point."

"The trouble is," replied the surveyor, "that they won't talk."

"——This is a piece of vertebrae of a cave bear, one of the very few good specimens in America."

"NERVES" AND SUCCESS.

The first human line of defence is then nervous or mental, says *Popular Science Monthly;* our ancestors established themselves on the earth by means of such powers of the nervous system as speed, accuracy and co-ordination of movements; and these are of supreme importance even yet. While, nowadays, shortness of reaction-time may only occasionally contribute to the actual saving of life, yet it does assuredly contribute towards what is called "success" in life. He who most quickly grasps a situation of danger and acts accordingly, has an advantage over his neighbor with the more sluggishly reacting nervous system.

It is obviously by his development of intelligence—a power of the nervous system—that man has not only conquered nature, animate and inanimate, but has learned to use its forces, even the most hostile, in the interests of his own comfort and prosperity.

A Review of Farm Literature

The Best Things Taken From the World's Leading Farm and Scientific Journals and Condensed Here For Our Busy Readers.

The Sapphire Hog

A New Breed in Process of Formation on the Farm of a Lawyer in New York

From an article by Prof. J. A. McLean, of Massachusetts Agricultural College.

WE are rather loth to believe that there can be anything new under the sun. Especially is this true with livestock. Old things with valuable characteristics may be discovered in unfrequented corners of the earth and introduced, or new features not hitherto found in a particular breed may be embodied in its requirements. But livestock men, both breeders and teachers, have generally not advocated the creation of new types but have emphasized improvement of old stocks.

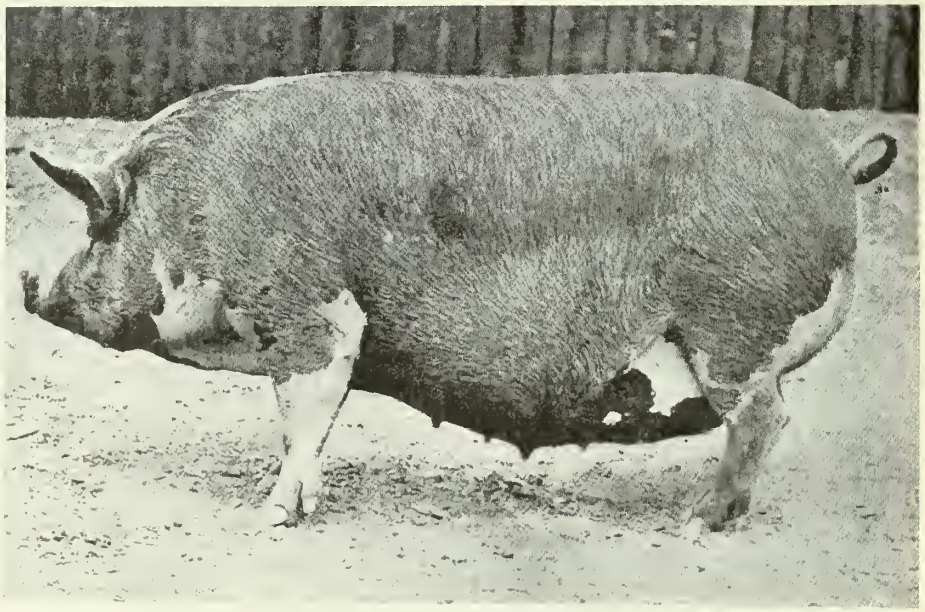
In plant breeding, hybridization has been one of the fruitful methods of producing new varieties, and plant-breeders generally have not been slow to make use of this method of advancement. Is it not possible that animal-breeders have worshipped pedigree too long and faithfully? Why might it not be possible for instance, to combine the good qualities of the two breeds. Holsteins and Guernseys, and from them evolve a new breed distinctly superior to either? When we go back over the history of our breeds of horses, we find that each is of more or less conglomerate origin; some of these breeds to-day permit to a certain extent, if they do not encourage, the introduction of outside blood. In most of our breeds of cattle the same conditions are found, as to origin. Cross-breeding, it is generally conceded, gives a greater vigor, a more rapid growth and consequently distinct market *advantages*. By careful selection, might not these features be retained in the succeeding generations from these hybrids? These are a few of the questions that demand a fair answer. Some experiment stations have undertaken to solve the many problems of this character, while a considerable number of breeders are also delving for the truth along these lines; and now one of the latter is coming to the surface with a so-called new breed of hogs. Time will reveal the true merit of this breed. In the meantime, let us see what we can see.

THE ORIGIN OF A GENETIST.

About eight years ago, George C. Griffith, lawyer, Harvard graduate and younger scion of a Virginian family, was given but one more year's lease of life. He was enjoying his tenantry and, disliking very much to quit it so soon, he undertook to disappoint the prognostications of his medical servants. He bought a couple of New England stone piles with a very narrow valley and a stream between. He liked solitude, so he selected his hills three miles from town and well away from the main roads. Here he built a bungalow of most simple structure about the size of a box car, well up on the highest hill, from whose glass front he could see the mighty ocean. Here he began to win back life.

Since little of the land was arable, dairy cattle was scarcely feasible; poultry he disliked, and sheep were impracticable, so that swine production became the only possible line of farm endeavor. A swill contract from a neighboring town gave a large supply of feed, so that this hog industry received a marked impetus. Within a couple of years the man was well and found himself with a large hog business on his hands. He still retains his law office in Boston, but contrary to the usual practice, he finds time to visit that office only on Saturdays.

Almost from the first Mr. Griffith had the distinct purpose of evolving a new breed of swine. In his first couple of years' work, with many hogs of all kinds, he saw many defects which helped to evolve the type of his new breed. Weak backs, pendulous bellies, broken-down pasterns, heavy ears, were defects common and serious. The new breed should have none of these undesirable traits. Then, too, the color must be distinctive. Black, red, white—this had been the entire spectrum of hog shades. The new breed must have a new color, and Mr. Griffith chose blue from the start, and without knowledge of the blue-grays of the Shorthorn-Galloway cross. Lastly came the matter of head. The erect trim ear of the Berkshire pleased, but not the pug nose; long snouts were too often associated with narrow bodies, and narrowness between the eyes; while lopping ears obstructed the sight, which is surely not desirable. Thus has evolved briefly the conception of the type. The hogs of this breed shall be blue. They shall have trim bellies and be a trifle more upstanding than the average run of fat hogs; they shall have distinctly the fat-hog form associated with excellent length of body; they shall have excellent strength of bone and be free from broken-down pasterns; they shall mature earlier than any other breed of swine; they shall have erect, fine, rather small ears. The line from the poll to the end of the nose shall be medium short and the forehead high; the top of the neck shall be slightly arched. They shall breed true to these characteristics. This, if you please, has been Mr. Griffith's conception of the breed before ever the Sapphire Hog was.



"Virginia," a Sapphire sow. This animal weighed 408 pounds at 11 months. She is an excellent specimen of a new breed in the making.

To what extent has he succeeded? First, let it be stated that the work is still in progress; none realizes better than the workman that his work is not complete. Yet he feels that much has been accomplished and that the end is in sight. There are now seven hundred Sapphire Hogs on his farm. He sells practically none of these, with certain exceptions. This gives him a large choice in the selection of both sows and boars for breeding purposes. In these the color is variable, although the blue predominates. In a great many of these sapphires there is a white belt of variable width just back of the shoulder similar to that in the Hampshire. This white belt is accompanied by white on the belly, white nose and face, and white feet. Many lack the white belt but have the other white markings, while still others have blue body, legs and feet, but are lighter colored about the snout. The blue color seems to advance by degrees and the hardest white marking to eliminate is that of the snout, and next, that of the feet, and next to that the "Hampshire belt" and white belly. But there were a large number of "all blue" pigs, though generally with them the face was a trifle lighter in shade and in the forehead invariably there was a slightly darker spot. The shades of blue vary from quite light to almost black. This is due to the proportion of white to black hairs, for the blue color is due to the free intermixture over all parts of the body of black and white hairs. There is no shading of the individual hairs. The skin is pigmented wherever the roaning occurs, but is not as fully pigmented as that of a pure black hog.

Several peculiar patterns occur in the uniform blue pigs. There are some pigs which have a mackerel pattern in the blue, due to areas containing a larger proportion of black hairs. These present very much the same marbled appearance that is seen in some gray-colored cats. There are quite a few pigs that have distinct dark stripes about half an inch wide running lengthwise of the body, and from one to two inches apart. In some these stripes persist through life.

SOURCE OF THE NEW BREED.

The source from which this new breed is being evolved is conglomerate. Yorkshires medium and large, Hampshires, Berkshires, Essex, and Chester Whites have been freely used, though it is probable that some Duroc Jersey blood was mingled in the earliest crossing; but the pure black, the pure white, or the black and white breeds have been distinctly the basic stock. Pigs of good individuality have always been selected and while money has never been thrown away in high prices, yet it has never been withheld when a desirable hog for breeding purposes was found.

The first departure toward the blue color occurred about five years ago. This was a white sow with a very slight tendency to roaning upon her sides. Necessarily in the selection for color at first, some leniency in regard to other characters had to be exercised, but now only uniformly colored boars are used that have a good percentage of the other characters demanded. In the boars, the type of head, the strength of bone, the color and the conformation are all insisted upon. In the mature sows more variations will exist. One sees the old-fashioned Berkshire snout and lop ear, and the white belt and other white markings quite generally.

There are a good many litters upon the place that are all blue, though they vary in the shading. A sapphire boar from sapphire dam and sire was mated to twenty-seven sows of other breeding carrying no sapphire tendency. Thirty per cent. of the offspring were sapphire and the highest per cent. in any one litter was forty.

It is to be expected that vigor and early maturity will appear in these hybrids. Mr. Griffith has obtained sows weighing 600 pounds at sixteen months, and thinks his hogs mature two months earlier than any of the pure-bred breeds which he carries on an equally large farm not far away.

"When we get through with them, they shall be uniform and breed true," was one of Mr. Griffith's last remarks to me, and one felt that if it can be accomplished at all, it will be. It might seem that perhaps these sapphire hogs can not be more "true blue" than can the Blue Andalusian fowls. We know that in certain fancy breeds of rabbits there are many wasters in every generation. Judging from a day's visit at the farm, this would not seem to be the case with the hogs, for from sapphire sows bred to sapphire boars, there were very few litters that carried pure whites or pure blacks. There were, however, litters from spotted sows that had only one cross of sapphire in the ancestry, that had in their litters pure blacks, spotted ones like the dam, and mackerel-marked sapphires.

There were other exceedingly interesting variations in color which, if they will breed true, will some days also appear as breeds; from a hereditary standpoint, they are now exceedingly interesting. There was, for instance, a Titian-coated young sow of unusual beauty and a shade of color I have never seen in Tamworth or Duroc Jersey. There were half a dozen very uniformly and peculiarly marked black and white pigs, which promise interesting results.

No claim for immunity is made for the breed, but it is an interesting statement of fact that although these pigs, by the thousands for the last five years, have been raised almost entirely upon city swill, yet there has never been any outbreak of cholera.

Such is the Sapphire Hog in the making.

The Farm Labor Problem

Some Sensible Remarks on the Hired Man Problem on Our Farms

From an article by W. J. Dongan in Hoard's Dairyman.

THE labor factor in manufacture and construction is a definite quantity. The contractor knows just how many man-hours it takes to accomplish his work. The manufacturer knows just how many pieces a man can turn out in an hour. So definite is this that the wages in many of the great shops are largely based upon the piece-work plan. The farm is being put upon the factory basis, but we are slow to apply the principle of man-hours to our manufacture of farm products. We have yet to learn that laws govern farm work as well as all other labor. Universally we are running our farms with short labor. As a consequence the work piles up; we push, and sweat, and fume. We work one man to death, hang his hide on the fence, and hire another. By working the land with short labor we are thwarting all of our highest ambitions as farmers. We deplete the soil; retard development; impoverish the home-life; break our own lives; discourage the young and drive them from the soil, thus increasing the ranks of the consumers, and decreasing and weakening the ranks of producers. The help problem stands at the very threshold of all agricultural progress.

QUALITY OF THE FARMER'S HELP.

The farm laborer must be fitted to the task. Let us see what are the requisites of a good farm hand. What are his duties? The farm hand works with delicate and expensive machinery; the sensitive, responsive soil, and the almost talking, feeling plant life. To rightly understand and manipulate all of these varying conditions he must be a man of intellect, sensibility, and high moral character. This latter requisite is of moment to all consumers of farm products. Cleanliness and purity of food is a crying need. The farmer touches the food at its fountain. Contaminated there, it must go on to the consumer ever increasing in its danger to health and decreasing in its food value. The farm hand must produce food upon honor. He must be a man of clean mind and healthy body. I have gone into a barber shop to get shaved and after observing the pictures upon the wall have gone out without the shave. If a man's mind is dirty, his hands are not apt to be clean. We must have on the farm help with pure minds and clean bodies, because they touch the food supply at its source.

CONGENIAL HELP.

The farmer wants congenial help. The manager and his hired man work together largely. The men are taken into the home, are a part of the family circle, and to a large degree influence the joys of the home life. At one time a friend of mine, a doctor, was about to buy a horse. He

wanted me to drive it on a try-out. I drove it for a day in my pastoral work. The horse was sound and a good traveler, but he was of a disagreeable disposition. He would mind the word to the letter. But in his service he would take the bit in his teeth, lay back his ears, and seem to say: "I will go, I will go like the dickens. But I hate to!" If I put out my hand to caress him, his response was a frown and a leer. I took him home at night and told the doctor that he did not want that horse. He must associate with his horse too closely to be hitched behind such a brute as that. Thus with our hired help, we must associate with them so closely that their ideals, habits, and very moods have an influence upon every member of the home. We need congenial help as well as intelligent, sensitive, clean-minded, and sound-bodied men.

HOW TO SECURE SUCH HELP.

Where are we to find such men? The world is full of them. I am seldom without several applicants on my waiting list who measure up to this ideal. Our university and agricultural schools are turning out a fine grist every year; many of them are men of the highest type. The trend back to the soil is calling some of the strongest and finest blood from the city ranks to the rural life. Many of these young men combine two of the largest factors in a successful man. They want to learn, and are willing to bring the body under control, to curb appetite, regulate habits, and control the whole life to this end. They want to work and work hard. They strive to do better work each day. Occasionally, when a visitor sees my group of six clean, clear-cut, high-minded men, and when they are informed that not one of them uses tobacco or liquor in any form, nor even swears at the cows, they want to know if I cannot direct them to such help. Can I? I might if—if they themselves were worthy of such help. Hiring a man is something like proposing marriage. You must have something to offer. It is as preporterous for a lewd, low-minded, thriftless man, steeped in all the evil habits and of profane tongue, to ask a clean-souled, high-minded, ambitious young man to work for and with him, as it is for such an evil one to ask a sweet, young woman to associate with him in the high work of home-making. If we are to have the right help, we ourselves must be right first. We must have a clean companionship to offer clean men. We must also have opportunity to offer these ambitious young men; opportunity to follow something of the ideals held up in our colleges; opportunity to work with thrifty flocks and herds; opportunity to use good horses and up-to-date machinery. Put ourselves and our farms on this level, and the help of right quality will come without seeking.

The pay of our help is another phase of the problem. What should be the scale of wages? The tendency is to payy all men the "going wage." This tendency puts down all that are ambitious and encourages incompetency. If the going wage is $35 per month, there are men whose services are worth two or three times that, and others who are expensive help at one-half that amount. Can we discriminate in this matter on the same farm and keep contented help? I regulate my payroll on two principles. The first is: To pay as generously to my labor as the income can possibly stand, and to increase this pay as business increases. The second is: To distribute this pay among the men according to experience, ability, and length of continuous service on the farm. I pay as low as $10 per month, and expect the ten-dollar man to put in as many hours and to get as tired as the best paid man on the farm. In other words, I pay on quality of work and not quantity only.

MY PLAN FOR REST.

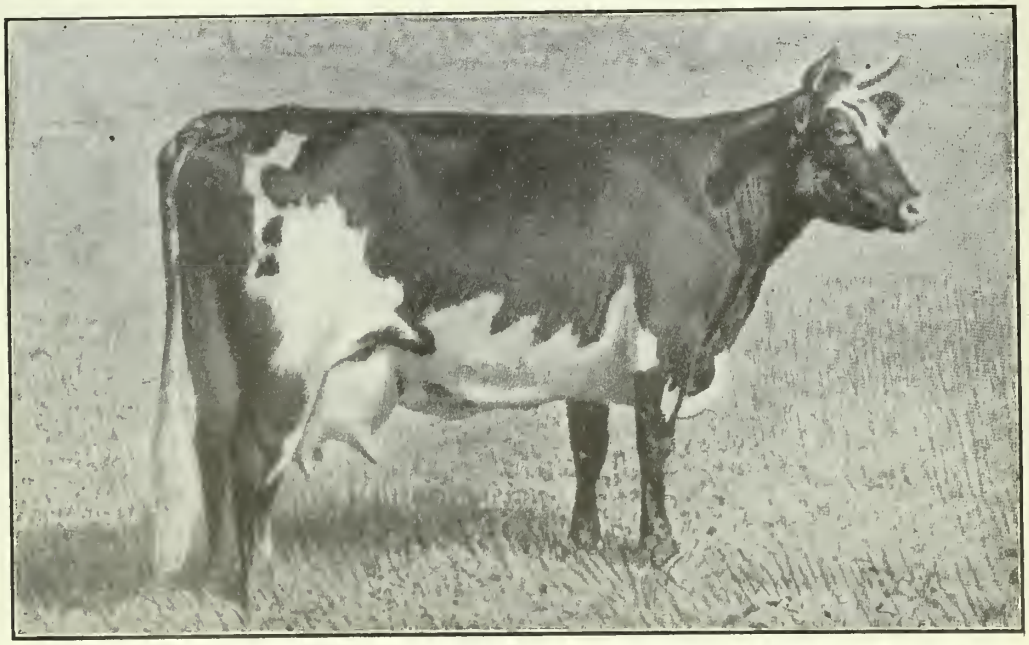
For the past three years we have adhered to the following plan. Each man has his regular half day. Bure takes Monday afternoon; Joe, Tuesday; and so on through the week. They know when their day comes. Anticipation helps in its enjoyment. From noon until four o'clock the next morning each one is absolutely his own man. They write their love letters, read, keep their notes and accounts, visit other farms or the shops, and go to town for pleasure. Never have had a man abuse this privilege by simply loafing or bumming. Sundays the two men whose duty is in the farm work during the week turn in and help the herd and dairy work. This lightens the work for all so each man has about one-half day rest on Sunday.

All can go to church either morning or evening. The plan is that the manager take the place of the man that is off each day, thus putting him in closer touch with their operation of each line of work. On Sunday the manager has his entire time with his family. I get up when I please, and put on my Sunday clothes. There is some culture and a little religion in this. I spend the morning with my family in reading and leisure. If I go to church, the horse is hitched up for me and when I come home it is taken at the door. Thus the day becomes a day of rest, a day with the family.

The whole plan is in keeping with the spirit and purpose of the command, "Remember the Sabbath day to keep it Holy." With this plan the dairy farmer is enabled to keep the day of rest, recreation, and worship in as good a sense as his city brother of the store, office, or shop. After these years of experience, I am confident that the sincere endeavor to obey this command on any farm will go a long way toward solving the help problem. It will attract intelligent, ambitious, self-respecting men of good habits. It will inspire loyal and honorable service — the factors most desirable in our help. Adopted by any large proportion of any community it will rebuild the rural church society, encourage education, and help all social service endeavor, because the community will have time for these things. That the plan is also a financial success is shown in my gradually decreasing cost of labor in proportion to total income, and yet I am paying better wages and securing better help.

REAL LIVING.

Why is it that railway magnates, presidents of banks and heads of great enterprises who must perforce do business in cities, almost all try to have homes on farms in the country, where they develop soils, plant crops and breed animals? It is because there is wearisome monotony in piled-up brick and stone. There is confusion in crowded streets and clanging trolley cars and hot smoky railways. These things man has made, and they are needful, but they are not life, much as the farm boy may imagine them to be. Life is in the open country. Life is in the growing grass, the waving fields of wheat, the springing corn.



Rose of Glenside. Record 18,075 lbs. There is a splendid opportunity for young men in every every province of Canada to do their fellow-countrymen a splendid service by launching into the production and recording of the dual-purpose cow.

High-class Milk Production

How Saxony Produces and Insures the Purity of the Milk for Babies

From E. W. Thompson's Report in the U.S. Consular Reports.

GREAT progress has been made in Saxony in the production of what is known as "kindermilch." Its large cities have stringent ordinances regulating the production as well as the sale of milk in general, and of kindermilch in particular. The capital city, Dresden, has a most comprehensive ordinance on the subject.

One producer of kindermilch in Racknitz, near Dresden, deserves special mention, because he has established and has been for several years maintaining what is probably the most scientific milk-producing plant in the world. He is Mr. Theodore Bienert, a man of considerable wealth, whose principal business is the milling of grain. The dairy is operated as a side line, or rather as a hobby, for the sake of philanthropically showing, without regard to cost, just what are the ultimate possibilities in the way of producing pure and wholesome cow's milk for infants.

The cows are Oldenburg and East Friesian, black and white, of the general size and appearance of what in the United States are popularly though erroneously known as Holsteins. They are carefully selected for health and culled from year to year, so that the herd of about thirty always consists of cows with the second or third calf. They are milked through only one milk period and then sold.

The building is of concrete and most of the floors and walls are lined with glazed tiling. The stable proper has a wide center aisle and raised floors on each side for a row of cows, with tails toward the aisle. There are cement gutters to catch all droppings, which are immediately scraped down through numerous openings to a conveyer taking them to a separate building. An exhaust fan below draws air down through the opening just enough to induce, through the screened windows, the proper influx of fresh air for any given number of cows. In cold weather the air can be heated. This refinement of ventilation was installed, in a measure, to compensate for the artificial conditions of keeping the cows always housed, where a natural supply of fresh air is not available. In summer the cows are given an occasional airing in an adjacent meadow. In ordinary installations the cows are never turned out to pasture, and in the stables there is either too little fresh air, or, in the effort to supply more, the large windows admit more cold air than can be resisted by cows that are tied up and thus kept from exercising.

COWS ON MATTING.

Ordinarily, cows stand on beds of straw, which become much soiled and are always a source of noxious germs. In the Racknitz dairy the cows stand on coco matting, which is daily cleaned and covered with fresh sawdust. Here there is perpetual warfare against dust, which would arise from feeding hay and from the use of straw for bedding. Such dry hay as is fed is brought in after the milking, so that the dust germs do not get into the milk. The vaulted ceiling of the stable is supplied with atomizers, through which fine sprays of water are thrown into the room to lay any possible dust just before milking.

Each day, before milking, the floors and walls are washed with hose, and the cows are carefully scrubbed by hand from head to foot. In addition to this, each cow is taken into an adjoining room once a week and given a supplementary cleaning and polishing, and from time to time sheared and clipped. To those who might think this an unnecessary refinement, Prof. Rievel, of the Hanover Veterinary High School, makes answer in his "Handbuche der Milchkunde" by the statement that long before cows give the usual tuberculosis reactions, enormous numbers of these bacilli may be found in the hair and hide.

The milkers, after thoroughly washing themselves, put on clean white overalls and use a special, freshly sterilized milk pail. This pail has a side opening to prevent the possible dropping in of foreign matter. It is equipped with removable fine wire cloth strainers, covered with new sterilized cotton batting so that the milk is instantaneously filtered. The milk is immediately taken into the cooling room to be pumped over chilling apparatus, where the temperature is reduced to about 39 degrees F. It is then poured into sterilized bottles and stored in an ice chest, whence they are sent out to consumers, covered with an insulating jacket of corrugated paper.

It is claimed that the rate of infant mortality has been lowered in the suburbs of Dresden and also in Dresden, through the care given to insure pure milk to the babies.

To Keep Cool on Hot Days

The Bathtub, Whole Wheat and Buttermilk Help to Keep the Farmer's Temperature Down to Normal in Harvest Time

From a timely article in Wallace's Farmer.

WE are now in the midst of summer and we may expect days when the thermometer will run from 90 to 100. The farmer must do his work in the hottest weather, while many business men in the city seek the seashore or the mountains, or the coolest place they can find in their homes or in the neighborhood. How shall the farmer keep cool while at work?

A hard question, some of our readers will say. It is worth while to consider nature's method of keeping people reasonably cool. She pours out water through the pores of the skin, of which there are unnumbered millions in the skin of any man or woman. By the pouring out of this water, which we call perspiration or sweat, and evaporating it from the surface, she keeps the temperature of the body down to normal, somewhere around 100 degrees. When it rises much higher than that, as the outside temperature often does in summer, sunstroke or sickness of some sort is apt to occur.

Therefore it is most important to attend to the skin. One of the best ways is to keep it clean; that is, keep the pores of the skin open. Many farmers do not have access to a bath-room; but they can keep clean even without a bathtub. The bathtub is a luxury which should be in every home—but farmers for thousands of years have kept clean and healthy without it. One can keep quite as clean without it.

CLEAN WITHOUT A BATHTUB.

Get two stiff brushes three or four inches long. One of ours is a Japanese brush, which can be bought at any drug store. Never wet this, but use it as a curry-comb, putting on as much force as you can stand. Then follow with the other stiff brush, using some good soap and scrubbing yourself. Use warm water when convenient, and it can usually be had if there is a fire and a tea-kettle. Rinse off with cold water, and use a coarse towel. Then polish yourself with the bare hands, and you will be as clean as an ordinary bathtub can make you.

As long as the pores are open and the sweat pours out, you will keep comfortably cool, and all that is necessary to keep up the supply of water is to drink plenty of it. Therefore, the first thing to do toward keeping cool on a hot day is to take such a bath as we have described, in the morning, using warm water. That will keep the pores of the skin open, and the heat will pass out of you as fast as developed.

Another important thing is to keep the bowels open. This is best done not by pills or oil, but by the diet. Use whole wheat or graham bred, plenty of vegetables, and only enough meat to keep up your strength, bacon or chicken, ham or beefsteak, when they are available. Men over seventy years of age ought not to eat beefsteak, if they wish to avoid hardening of the arteries. In fact, we find on consulting men over seventy, that with hardly an exception they have dropped off a meat diet. As we become older, we need less meat.

Drinking plenty of water, especially on retiring, will help to keep the bowels open and keep a man clean on the inside, which is quite as important as keeping clean outside. Many of our readers have access to ice water. Go a little slow on that in hot weather. Water at the temperature

of a good well is cold enough. We know it is a luxury, but we can afford to go a little slow on luxuries, if we have better health and feel better for it.

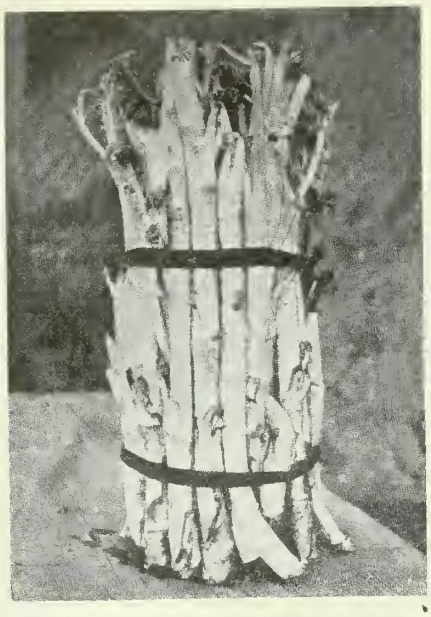
THE VALUE OF BUTTERMILK.

One of the best drinks a man can have in hot weather is buttermilk—the old-fashioned buttermilk made at home is much better than the creamery product. It will pay to churn once every two or three days, simply to get good buttermilk. This is both food and medicine.

If the sweat stops on a man for any cause, whether from exposure to drafts when heated, or from any other cause, he had better seek shade. It is like keeping up a hot fire inside of you and closing up the outlet. It is like building a big fire in the grate and putting a lid on the chimney.

One thing more: To keep your body comfortably cool, keep your mind at peace. Fretting, worrying, even fussing about the heat, make a man hotter. Keeping cool mentally will help you to keep cool physically.

Farmers may say: That's all very well for you, sitting in a swivel chair in a brick building, possibly with an electric fan to keep the air moving; but it's different with us, out here in the sun. Well, we are talking from our own experience as a boy on the farm, drinking water from a jug or a bucket which the small boy has carried out to us, sometimes, we used to think, moving at a snail's pace. Keep water in a jug, not a glazed jug, but an unglazed one. It will keep reasonably cool in that, because the porous character of the jug allows some water to pass through and evaporate, in this way cooling the contents on the inside.



The udo comes from Japan, where it is a staple vegetable. It is similar to asparagus but much easier to grow, and makes a splendid salad.

If these suggestions are followed, and the man is in ordinary health, there is no danger of the sweat stopping, nor of sunstroke. There are people who are delicate or infirm, who can not stand the direct rays of the sun. Such a person should wear a hat, but the lightest kind of a hat, when obliged to be out in the sun during the heat of the day. If the pores of the skin are kept open and the bowels open, and the diet is mainly a vegetable one, the farmer can keep quite comfortable even on a hot day.

Some New Vegetables

Experiments by Government Experts to Improve on Edible Plants Have Been Successful

From an article by Mary Hamilton Talbott in House and Garden.

A SUBSTITUTE for the Irish potato is the dasheen, which the United States Government confidently expects will shortly be as much used on our tables as that tuber; in appearance it is a cross between a large white potato and a sugar beet. It is a heavy tuber plant and forms the root of heavy groups of leaves strikingly similar to the ornamental "elephant ear," and in many ways it is like this plant, too, for tasted raw it will cause a stinging sensation that is long enduring. Cooked, however, this unpleasant feature disappears and the dasheen becomes a dish par excellence.

It can be boiled, baked, or served in any other way that the ordinary potato is used. It also makes splendid stuffing for chicken, veal and other meats. It has the same mealy taste as the potato, but added to this is a rich chestnutty flavor. It is larger than our potato and if carefully tended is larger in yield. Another advantage is that it will grow in hot moist regions, under conditions of humidity that would cause its cousin to rot, all of which means a decrease in cost. Still another advantage lies in the fact that whereas the tops of potatoes are worthless as a food, the tops of the dasheen make delicious greens. All that is needed in preparing them is the addition of a little soda to the water in which they are boiled to remove the acrid taste.

The dasheen is no longer an experiment. It is now being grown on many farms throughout the south and west, and has been raised in small quantities in gardens near Washington. Actual tests show them capable of yielding from 400 to 410 bushels to the acre.

THE VEGETABLE PEAR.

The chayote, or vegetable pear, is already obtainable in some markets of the larger cities of the south. Large green and pear-shaped, in texture somewhat like a squash, it has a flavor more delicate than the cucumber. Its roots, too, are edible, and the young stalks are as tender as asparagus. This new vegetable is raised without difficulty anywhere on our lowlands near the coast below the Carolinas. Its keeping qualities are remarkable; it provides a change from the ordinary winter vegetables and can be served in many ways. My hostess in the South served them after this recipe: "Peel the chayotes, cut them in two, remove the seeds and boil an hour and a quarter; then stuff with Duxelle—one finely chopped onion, and two shallots stewed in butter until brown, to which add some finely chopped mushrooms and allow the whole to simmer until the moisture has been thrown off by the mushrooms, season with salt, pepper, and a bit of chopped parsley—and bake in an oven for fifteen minutes, then serve with tomato sauce." Prepared as a salad this vegetable is delicious.

Asparagus is now a luxury, but the new vegetable, udo, which the Government expects will take its place, will be much cheaper, and it is more easily raised, more prolific, and it will grow in any soil suitable for asparagus. This new vegetable comes to us from Japan and is as common there as celery is here; it has been found to grow readily in a wide area in America. It is ready for market early in the spring, and can also be blanched in the autumn. When cooked one eats both the tips and stalk, the latter being without any of the stringiness of the asparagus; instead it is a soft spongy mass, which, strangely enough, tastes rather different from the tips, but yet is its best simply boiled and served like asparagus. America is a land of salads, and this new vegetable will therefore find a welcome, for its salad possibilities are numerous. Served this way it resembles celery, though it has none of the objectionable fibres of the latter. It has a fresh taste like the midrib of a lettuce leaf, with a slight but agreeable suggestion of pine flavor.

THE SCARLET TURNIP.

The scarlet turnip or giant radish, also comes from Japan, and grows in any soil capable of raising either of these vegetables as we know them. It is as large as a very big grapefruit, is unusually symmetrical in shape and is a deep crimson from top to bottom. It can be planted late in summer, after the other garden crops are out of the way, and so rapid is its growth that it is ready for the table before winter. There are all sorts of ways of preparing the turnip-radish. As a turnip it may be boiled, mashed, fried, or made into a delicious ragout. As a radish it may be sliced and served raw and eaten with salt. Its economic advantages in this respect are immediately apparent, for a single turnip-radish sliced is equivalent in bulk to many bunches of the radish as we know it. It comes, too, when garden radishes are gone and only the hothouse ones are procurable. The leaves make delicious greens when boiled.

Some one has called cabbage the "great American dish," but there are many who, though liking its taste, will not use it, owing to the unpleasant odor attendant upon its preparation for the table, if served

cooked. Relief has been found for all these by Government experts, who have imported and started the cultivation of petsai, a new cabbage which is absolutely odorless and with a flavor far more delicious than that of our vegetable by that name. Petsai does not resemble cabbage very closely. Instead of being squatty and globular, it is tall and much in shape like a waste-paper basket. Neither has it broad, heart-shaped leaves; they are narrow and delicately curling with dainty frilled edges. The leaves cluster around the stalk compactly, but they are easily pulled off for the pot. Petsai can be grown on any land where ordinary cabbage can be cultivated, and on many lands where the old-time cabbage would not succeed. Most valuable features about the petsai are the facts that, in addition to not requiring hothouse growth and transplanting, it can be planted in midsummer, with the result that a crop can be gathered after the season when the ordinary cabbage comes to an end. Or petsai may be planted in the fall, thereby allowing a farmer to plant cabbages, gather and sell them, and then replant the same soil with petsai; thus this land will be productive practically throughout the year. Although this new cabbage can be grown to a weight of sixty pounds each, its flavor is more delicate when at about eight pounds. It can be used in all the ways of which cabbage is capable, and in addition makes a very splendid salad, more delicate than cold slaw.

THE "BURR" ARTICHOKE.

The big, green. flowery-looking "burr" artichoke has long been imported from France, and is familiar to the epicure, but it is now cultivated in many places in the country and has reached the markets in some cities at a price little higher than cauliflower. It can be served with a cream sauce, like cauliflower, and in many other ways.

The bean lover has not been forgotten in the menu of new vegetables, for there is a new bean—a bean from the Philippines known as the Lyon bean, closely related to the Florida velvet, but possessing a totally different flavor and consistency. This has been produced by hybridization and is one of the most successful efforts in that line, growing rapidly and extensively and proving a valuable food product. Then there is the soy bean, brought from China, which when once started grows quickly, yielding three crops a season.

Plant Breeding in Sweden

Pioneer Work of the Svalof Institute has Resulted in Revolution in Breeding Methods Throughout the World—Many Canadians have Visited this Experiment Station

From an article by H. Hjalmar Nilsson in the Journal of Heredity.

THE question of seed had been long discussed among Swedish agriculturists, when M. B. Welinder, a young farmer at Svalof, seconded by Baron F. Gyllenkrook and many other enlightened agriculturists of the province, founded, in 1886, a local society for the improvement of seed. In a short time it aroused so much interest throughout the country, that it soon grew into the Plant Breeding Society. Little by little, it received subsidies from all the Swedish agricultural associations, even those in the extreme north, and finally also from the Government. At the same time, about one thousand members from all parts of the country gave it their financial and moral support.

Care had been taken from the beginning to join this enterprise with an independent association of agriculturists, in order to interest its members directly in the work being carried on, and at the same time to obtain their regular subscriptions. There are two groups of members: those who are permanent after having paid $28, once for all, and those who pay annually $1.40. A directorate of seven persons, composed of agriculturists and others interested, has charge of the administration and the finances.

The money necessary to carry on this work is secured from various sources. The annual subscriptions of members give, on the average, $740 a year. The agricultural associations have contributed about $4,460 a year, and even more in recent years. Finally, the Government has, ever since 1890, granted $4,200 a year and, since 1905, this subsidy has increased to $11,200. At present the yearly subsidy has been raised to $21,500; this sum includes the contributions of the agricultural associations, which will shortly be discontinued.

Finally, receipts from the sale of new creations—of which I will speak later—give a profit which has increased yearly. During the period 1901-1906 it averaged $1,450 a year, afterwards it increased to $4,400 a year, and at present it exceeds $16,00. Thus, the budget of the society for 1913 is not less than $30,000 and for 1914 $40,000.

From the payments of life members—about $10,000 in total—a fund has been set aside for buildings, much increased by donations from patrons of agriculture, which indicates the keen interest that this patriotic enterprise has awakened. The total of these donations amounts so far to $77,000.

Accordingly the society now has at its disposal a large and well-equipped establishment, comprising two connected buildings serving as laboratories, a house for preparatory work, with a little farm and a dwelling-house; it also owns 40 acres of land, of which special cultures and seed-multiplication plots occupy 25 acres. Despite this, it has been found necessary to make most of the cultural experiments on the wide fields of the huge property adjoining, in order to give the different cereals, occupying in total about 30 acres a year, their proper place in the rotation of crops, which is found absolutely necessary for normal development.

THE DEVELOPMENT OF METHODS.

Considering that the work at Svalof was started by farmers, and that it is the first time an attempt was made to interest theorizing scientists in a question so frankly practical, you will understand that the program of work could not be otherwise than vague and fluctuating, at the commencement; it is only as the result of experience that a suitable method was by degrees found and adopted.

It is, then, evident that the history of this task ought to offer a picture of successive improvements, of new series of experiments, of changes and, finally, of progress; it is the more instructive because it has gone at least ten years ahead of contemporary institutions with similar purposes.

The starting point of the work was naturally the "methodical selection" accepted and practised universally at that time, in direct accordance with the selection theory of Darwin, which was still recognized as the probable solution of the problem of the formation of species in nature.

It will be sufficient here to recall that we believed a methodical selection, long continued, of plants characterized by a certain common quality or disposition would lead to the creation of a new variety which would be constant and which would have exactly that quality desired as a distinctive and hereditary characteristic. The result, it was said, would be just what was seen as the result of natural selection.

It was not until ten years later that a profound criticism of these ideas was made by Hugo de Vries, who seriously questioned whether the progress in plant improvement which had been attained was really obtained by the method supposed, the insufficiency of which he pointed out both on theoretical grounds and by citing his own experiments. The new method of operation, by which he proposed to replace the ancient method previously employed, *had at that time already been in use at Svalof for ten years*, as we were able to prove by the hundreds of genuinely new varieties which had resulted from its application. But, because of the frankly practical character of our organization, we had been so much occupied with the practical application of our discovery that we had never had time to elucidate the theoretical question or to lay the result of our observations before the public.

METHODS IMPROVED.

It was not without deliberation that the engineer von Neergaard, the first scientific director of Svalof, based the work on methodical selection. He simplified methods as much as possible, made

the experiments more practical, replaced "approximate" measurements of certain characters of the plants by numerical valuation of weight, number, measure, size, etc. In pursuit of this aim he invented special instruments and introduced new methods of research. He was thereby able to control objectively resulting variations on their relative constancy. Thus, methodical selection was for the first time made the object of critical scientific study, the results of which quickly appeared.

In 1890, when I became director of the work, I had to meet the desires of the authorities who were subsidizing us by making a hasty general survey of the notes which we had compiled. In spite of the extent and intensity of the selection experiments which had been made, that inspection did not show me the results which we had a right to expect. Rigorous selection pursued during five years had produced only a relative uniformity; we could not show a single new and constant variety-character. And most of all, it was evident that our selected varieties, left to themselves for a year or two, unquestionably fell back to the condition of a mere mixture of the original varieties.

Evidently, we were unable to produce what the Swedish farmers wanted—better varieties, which would be constant. It was obvious that we must find a new method of operation which would give better results.

Such, then, was the desperate situation at the beginning of 1891.

But by the summer of 1893 the difficulties had been overcome; a new method of work was in use at Svalof, which promised perfect results in carrying out the program which the society had laid down.

During the second year of my residence at Svalof (1889), my botanical instinct had led me to study attentively the numerous strange forms which were found among the old cultivated varieties; by planting these strange forms, would it not be possible to produce new varieties as good as those which we had tried to create by the slow and systematic improvement of the original variety?

START ON NEW PLAN.

The work was started without delay. Preparatory experiments made in 1890 with 30, and continued in 1891 with 291 different types of spring wheat and vetch had not given satisfactory results, so I increased the number to a thousand in 1892, including all the cereals, peas and vetches which we were studying. At first the result seemed none too encouraging; yet I had occasion to observe, here and there, some novel autumn wheats which at once opened interesting perspectives to me; they represented only five per cent. of the whole collection. They showed a uniform and characteristic type, such as we had never previously found in our plantings; it was evident that they differed wholly from the rest in value. The office records showing the origin and treatment of these plots were accordingly examined, and we found that each one of these lots came from a single

The chayote or vegetable pear has unusual keeping qualities, and is a fine winter vegetable.

head of grain, or else, what amounts to the same thing, from a single plant. Our attention was by this means drawn to the importance which the progeny of a single individual has in the plant breeding. It was a novel idea for us; appreciated from the scientific point of view, it did not fail to inspire us with great hope.

In order to obtain a definite solution of this problem, we made a general experiment with separate cultures, in our 1893 planting, using 2,000 different numbers and letting each number represent the planting of the seeds of a single well-marked individual plant. The result was convincing. It left no doubt as to the fact we had discovered in our preceding work, that the only true starting-point for the fixation of different types must be plants taken one by one; the only unity with which we should work must be the living plant itself and not at all—as had hitherto been supposed—its individual organs: the ear, the grain, etc., to which different hereditary dispositions had been attributed.

SVALOF METHOD OF PLANT BREEDING.

This discovery completely changed our outlook on the problem of plant breeding, and also—as we realized very clearly—on the methods of selection. No sooner had we obtained sufficient proof than our operations were changed and immediately directed in accordance with the new principles.

In the first place we demonstrated the existence, in our material, of a large number of independent forms, having widely divergent qualities and a practical value that was quite variable. Thanks to our separate cultures, each one deriving from a single plant—"pedigreed culture"—which was easy to control, we have found that most of the descendants are constant, and only in rare cases are they in the heterozygous condition resulting from crossing. Thus, while we had formerly been absolutely incapable of producing a single variety which would really breed true, we found ourselves from then on able to produce as large a number as we pleased of new and stable sorts, suitable for extended culture.

In employing the old method of "selection in mass" and methodical order of choice, we are working blindly without knowing how or when or even whether we would some day reach stability of the type, which was more important than any other quality.

On the other hand, if we commence by a pedigreed culture, as at present, all fear of failure because of insurmountable variations is eliminated. The varieties are already there, and fixed from the beginning of work; the only difficulty is to learn to recognize them and to place the proper valuations upon them. The principal and only decisive work thus comes *after* the fixation, and when the variety is already established and in our possession.

The long series of selection-operations which we had previously been obliged to make each year on thousands of plants and for their different organs—on the plant as a whole, on its straw, on its various ears, on the haulms and on the grains—all that was now superfluous, since we recognized that the plant itself was the ultimate unity, to be treated by a comparison with all the other individuals of its generation. The ingenious instruments which had previously been indispensable in our researches have now been set aside as museum exhibits, to be used at most for an occasional control-examination: the field of experience is from now on the place for appraising our results.

THE MOST ESSENTIAL WORK.

It will be understood also, that although this simple operation created a complete revolution in our methods, pedigree-culture has nevertheless received only a secondary place among the operations at Svalof. It has become only a preparatory and practical auxiliary for getting out properly the material which we desire to utilize. The greatest interest and the most essential work, on the contrary, remain in further investigation of the practical value of the innumerable little elementary species.

The decisive qualities of each species being surprisingly numerous, and combining with each other in related forms according to a fabulously rich scheme, the determination of their comparative values becomes an extremely arduous task, the more so since it is necessary to start with as large and varied a collection as possible, if we want to have a chance really to find the best. Accordingly, since that time the principal work of Svalof has been connected with these problems. That is why it has become so preponderant, why it has stamped its character on the whole system at Svalof.

The first thing to do was to divide up the work among the competent persons available, in such a way as to give to each one a limited field, comprising one or two cereals. Then, by profound study of his own material, by rigorous research and field trials, each one was able to become an expert in his special branch, training his eye to distinguish first of all the different forms, and next the relative value of existing characters.

Thus prepared, we became able to establish an exact systematic classification of the different species, the only means applicable to obtain a comprehensive survey necessary to the study of polymorphous material. The first comparison was between the groups thus limited, and the second an examination of the different sorts inside these groups.

The fact that we have usually succeeded in making natural systems out of these classifications, where characters which are clearly morphological indicate to us the absence or presence of qualities determining the practical value, is an advantage which can not be overestimated. It makes it possible for us to make some progress, at least, toward the desired goal, from the moment that the first generation is examined.

For the final and decisive determination of agricultural value, we have had on the contrary to depend on practical trials. It was thus a great advantage to our institute to have a strictly agricultural organization and equipment, due to its close relations with practical men. It is solely the progeny of these "elite" parents, cultivated in an ordinary field under normal agricultural conditions, that determines the practical value of the inherited qualities of the numerous new forms. To reach the final decision, cultivation and careful examination during a long series of years are ordinarily necessary.

In order to be able to apply all these processes with exactitude, and with the order necessary when thousands of forms are dealt with, we have had to invent numerous practical arrangements. We have had to establish special genealogical tables, corresponding to the systems of fixed forms, with a numerical arrangement applying to the parallel genealogical collections which we made, as well as to the trial grounds, the records, the labels, etc. The interior arrangement of the work rooms, and the whole organization of the laboratories, had also to be on lines which were absolutely systematic and easily inspected. We have reached the point where we have at Svalof an establishment that is probably unique in its complete adaptation to its own method of independent work. Our institution and our method thus comprise, together, a unity which promises to perpetuate both our special system and the intensity which has always marked our application of it.

In its broad outlines. this order of work was established in a very few years; so we were able to demonstrate its operations for the first time at the general congress of Swedish agriculture in 1896, by several hundred varieties which were new and stable, and under comparative observation. During the course of our work it was also obviously stated how numerous and decisive the lines of progress were which we had already utilized practically for the benefit of Swedish agriculture, before it had been even realized in other places what we were trying to do.

By the infinite number of stable forms which with this came to light in our culture material, the amelioration of economic plants had a basis far wider than the old method could give, with its limited number of chosen varieties; the possibilities of producing valuable novelties were increased, because the qualities at our disposition varied widely, and among them—as our experience soon showed—are included the season of maturity, cold-resistance, disease-resistance, etc., qualities which are of a great practical value, but which had previously been quite inaccessible to the work of plant breeding.

Since the forms which we regard as varieties are systematic and independent unities, although of secondary order, the fact that they breed true considerably extends their possibilities, for they can be propagated without the necessity of renovation too often by the purchase of new seed.

The constancy which distinguishes them concerns many characters and qualities, as to whose transmission we had never dared to depend. As it persists in a notable degree among all the plants—at least, during the early generations—whatever there is in the variety in question of a particularly inheritable nature becomes more obvious than before, a circumstance which greatly facilitates the expertizing and the control.

It is very true that the most specialized kinds demand more judgment and care on the part of the cultivator, but they equally increase his chance of as large a financial profit as possible, when he has learned to make a judicious choice among the strains, in accordance with local conditions. Considering the keen competition of our days, this judgment becomes more and more a vital question for modern agriculture.

It is especially for the people of the North, who, because of their climate, their isolated situation and the varied character of their soil, can only rarely get their seed supply from more favored countries—it is for these people that a method of selection, based on the very heterogeneity of the material, necessarily must have an inestimable value. It is only by this means that we shall be able to use the eventual values of our old, native races; inferior as sorts, they nevertheless offer, by their most serious defect—polymorphism—exceptional chances for the selection of a better variety.

With the same motive, we can handle the species and native races of all countries by this method, no matter from what climate they come or what their nature may be, for we everywhere find a diversity of forms offering ample room for selection.

INSTITUTE REACHES ITS GOAL.

In establishing this method of work, the order of procedure in which has been reversed since the valuation of qualities is made on varieties already fixed and with the aid of the auxiliary associations whom we serve, we may say that the Institute of Svalof has reached its essential and peculiar goal, and that it has attained for itself a memorable and incontestable place in the history of plant improvement. Following its example, all analogous contemporary operations have successively passed from selection in mass to the utilization of the qualities of hereditary character, studied on an isolated plant, although sometimes under different names, such as "individual selection," "selection by families," etc. Separate culture and separate judging have also been, and still are, conditions necessary to the practical application even of discoveries made later concerning the value of different qualities as mobile, hereditary units.

I would certainly not wish to be understood as saying that propagation of separate plants had not previously been made by cultivators like Shirreff, Vilmorin and Hallet. But it is certain that not one of them, not even Vilmorin, had ever realized such great possibilities of this simple procedure, as we had discovered and applied in practice here at Svalof twenty years ago.

Futhermore, their experiments in this direction were, at the beginning of our experience, so completely forgotten and ignored in practice that it was necessary for us, as I have already said, to discover the fact anew.

The reader may well ask of what nature are all these little elementary species, which have allowed the old material to be sorted out into independent new sorts? Do they come from mutations, from natural cross-pollination, or from both together?

It is a fact well authenticated at Svalof that mutations appear from time to time in our cultivated plants. Furthermore, we have found that spontaneous fecundation is much commoner than we had supposed. But it must not be imagined that we can discover with certainty, in each particular case, the origin of all the forms—and anyway, the knowledge of how they originated does not trouble our practical work, for which the fact of their existence is sufficient. Finally, it must be noted that the significant results furnished by diverse methods of origin are the same in the two cases, that is to say, they lead to the possession by each group of a multitude of systematic unities, differing from each other in the way their characters, often few in number, are combined. They are all what have been called "minute species' or "elementary species." Mr. Johannsen, who later examined them carefully, has described them as "pure lines." Here, we have retained for them, for practical reasons, the English names of "pedigrees."

THE WORLD'S CHAMPION HEN.

The Oregon Agricultural College hen that broke the former world's egg-laying record a short time ago by laying two hundred and ninety-one eggs, has just finished her full year with three hundred and three eggs to her credit. This record is all the more remarkable in view of the fact that the hen was only five and one-half months old andit was her first twelve months of laying. She is still in excellent condition and shows no signs of ending her wonderful career.

The Baby's First Summer

Safe and Simple Methods With Warm Weather Troubles

By ETHYL MUNRO

"IF the baby should get summer complaint!" This is one of the anxieties of the young mother of even the healthiest baby. She knows how trying the hot weather is, for the little tykes, and wisely takes more than ordinary precautions. But even then accidents sometimes happen.

Bottle-fed babies are more likely to have trouble than those reared naturally, not only because cow's milk taints so quickly in the summer while human milk cannot be contaminated, but because the heat generally weakens the baby's digestive system a little, and no matter how skilfully cows milk may be doctored up, it is always more or less difficult to digest. The chemical composition may be made to nearly equal that of human milk, but the nature of the fats and proteids is still very different.

In exceptional cases, however, and after weaning it is necessary to make up a "humanized" milk and it is at least a satisfaction to know the reasons for the prescribed formula. The relative percentage compositions of the two are:

	Human Milk.	Cow's Milk.
Water	87 to 88	87 to 88
Proteid	1 to 2	3 to 4
Fat	3 to 4	3½ to 4½
Sugar	6 to 7	4 to 5
Mineral matter.	.1	.1

In making up the imitation then, we have to add water—usually barley water is used—to overcome the excess of proteid in the cow's milk and as this decreases the percentage of fat, cream is added, or else top milk is used. Sugar must be added; milk sugar being easier of digestion than cane sugar, and as cow's milk forms a more solid clot in the stomach, and has an acid reaction while the human milk is alkaline, and antacid like limewater, baking soda or sodium citrate must be given.

Dr. Helen MacMurchy advises the following mixture for one feeding at the time the baby is weaned: Milk, 5 ounces; milk sugar, ½ teaspoonful; pure water or barley water, 3 ounces; sodium citrate, 5 grains (about one-twelfth of a teaspoonful). If the baby does well on this then gradually add top milk, beginning with top milk, 1 ounce; milk, 5 ounces; pure water or barley water, 3 ounces; sodium citrate, 3 grains.

In summer feeding, especially on very warm days the feed may be modified slightly. The baby does not need so much fat or cream in warm weather, so the bottle may be shaken up before the milk is taken out. It is advisable to pour out one or two ounces from each bottle on very warm days and replace this with boiled water or barley gruel. (Oatmeal gruel should not be used in warm weather).

A pretty sound little specimen, but even the healtiest baby may find this a trying time.

If there is vomiting of sour material, the lime water or sodium citrate might be doubled for a few days. For a delicate baby it is often a good plan to give the last meal at night of barley or wheat gruel, and no milk at all if the day has been very warm, or his digestive system over-taxed.

Scrupulous care must be taken now more than ever, to keep bottles, nipples, the food, and everything relating to its preparation in perfect condition. Bottles with tubes, screws, sharp angles or shoulders should never be used. It is almost an impossibility to keep them sweet.

It is also most important that the baby should have as much pure water as he wants. Water that has been boiled and cooled should be given regularly between meals, except for very young infants. Then it is given warm. It is not well to fill the stomach with water just before feeding, but taken between meals it clears the mouth and gums, aids in cooling the body through perspiration, and helps to relieve constipation.

A great deal of a baby's restlessness may be due to uncomfortable clothing. To keep him well protected but not too warm we should have the lightest weight silk and wool flannel band, and shirt with high neck and long sleeves, the lightest weight silk and wool stockings and silk and wool flannel skirt. He should not be hampered with a heavy skirt or barrow coat in hot weather. When he is put into short clothes, instead of the flannel band he should have a light silk and wool knit band with shoulder straps. This is the most important article a baby wears as it prevents the delicate organs of digestion from sudden chilling—a most important matter in warding off summer complaint. The band should be worn night and day, but, of course, the baby is given a complete change of clothing when he is put to bed.

During extreme heat a great many babies, especially the very plump ones, suffer from prickly heat. Often this is due to too warm clothing and may be relieved by wearing only muslin or linen next the skin. Washing with pure cold water, and dusting with a good talcum or wheat flour will give relief, or if itching accompanies the rash a bran bath should be given.

For hives, which frequently follow a disordered stomach, a dose of castor-oil or a teaspoon of rhubarb and soda mixture for a baby a year old may be repeated every three hours until the bowels are thoroughly cleansed. It is a good plan to stop all milk for at least six or eight hours, and give barley water or rice water at regular meal hours. The hive blotches are cooled very quickly by applying a paste of baking soda and cold water.

Breast-fed babies are less apt to have summer complaint than bottle-fed babies, and if they do take it, it is a more simple matter to get them back to regular feeding again. The only treatment necessary in most cases is to stop all breast feeding at the first sign of vomiting or diarrhea and give a teaspoonful of castor-oil. Then make some barley water or gruel and give it at regular feeding times for twelve or twenty-four hours.

Barley Gruel.—Take one teaspoonful of barley flour, and mix into a smooth paste with a little cold water; stir this into one pint of boiling water and boil for fifteen minutes; add a pinch of salt and enough water to make up the pint (for some will have boiled away); then strain. If the flour cannot be obtained use the grain. Take two tablespoonfuls of the barley; soak in cold water over night; next morning pour off this water and add one quart of fresh water and a pinch of salt; boil for four hours down to one pint, adding water as it boils away so that a pint will be obtained at the end of the time; then strain through muslin or a fine sieve. Gruel must be made fresh every day.

The treatment for a bottle-fed baby is just the same, but particular care must be taken in going back to the regular feed. It is safest to begin by adding a little skimmed milk to the gruel—cream often causes a return of the trouble—and the milk must always be scalded. At first only two ounces of milk should be added to a pint of barley water, increasing the amount as rapidly as the baby can digest it, until equal parts of milk and gruel are mixed. Then try whole milk in the gruel and then gradually work back to the old formula, using one ounce of lime water for twenty ounces of food, but omitting all sugar for a day or two.

If rapid improvement does not take place don't waste time trying "home remedies," but get a reliable doctor at once. Other treatment like washing out the stomach may be necessary.

Tenant Farming

How Can the Tenant Farmer Make Good Money and Still Keep Up the Land Owner's Property and Pay Rent?

By WALTER JAMES BROWN

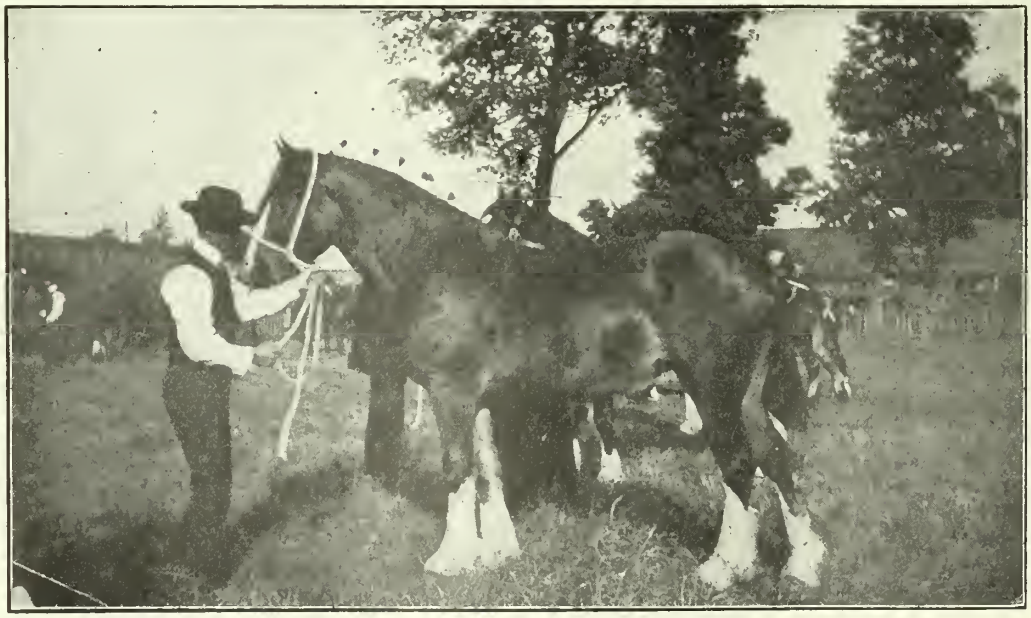
In this article Major Brown has gone rather thoroughly into one of the big problems of Canadian agriculture. He treats the question squarely, from the standpoint of both tenant and land-owner with facts that may come as a revelation to many readers. The following figures from the census taken by the Federal Government show a decrease in the number of tenant farmers during the last two years. Whereas the residents of farms were formerly: Owners, 179,791; *tenants,* 32,360; *owners and tenants,* 11 976, *there are now* 183,843 *owners;* 30,634 *tenants; and* 8,783 *owners and tenants. The writer throws considerable light on the reasons for these changes, with pointed suggestions for a better working arrangement.*

ONE of the agricultural problems in Eastern Canada that is calling for economic study and discussion is tenant farming. Owing to the shift of population from the rural districts to the larger towns and cities, and because of the depletion of Eastern farms of the young people, who have gone West, to homestead, a very large number of farms in the older sections are now in the hands of tenants. As the people who are still on the land as owners become too advanced in years to till their farms profitably, under the existing conditions of labor stringency, satisfactory methods of leasing must be devised and capable tenants found. If buyers were available to purchase these lands and new blood and energy could be put into the rural communities the problem would be more easily solved, but unfortunately the people who can buy cleared farms, with their buildings, in long-settled districts, are not coming to Canada in sufficient numbers to take advantage of the opportunities now offered.

The question submitted for consideration at this time is: How can the tenant-farmer make good money and still keep up the landowner's property and pay rent? The writer admits that this question is fairly bristling with difficulties, but he believes he can answer it in a manner that will be satisfactory to landowner and tenant alike, whether present or prospective. There is no doubt that if a reasonable solution to this problem can be found it will mean that many hundreds of thousands of dollars of unproductive capital which are now tied up in farm lands in Eastern Canada will be made to yield dividends, while countless numbers of farms which are to-day only partly tilled will become increasingly valuable assets to their owners and profitable holdings to their occupiers. What the results in aggregate yields of farm products, over and above those now secured from the same areas, will amount to can be only approximately estimated.

In renting a farm in Canada it is not safe to follow the system that prevails in Great Britain. The Agricultural Holdings Act, which is the law governing tenancy in England, the form of written contracts in general use, and the system of farming that has been built up as the result of a century and more of progress in agriculture, make it comparatively easy for both landlords and tenants while the risks are reduced to a minimum. This is not the case in Canada. Here science and practice in agriculture do not go hand in hand, while the methods of cropping the land and feeding and managing livestock and the system of adjusting relations between landlord and tenant have not been wrought out as they ought to be. It must not, however, be understood that the Canadian tenancy problem can be settled by placing an adaptation of the Agricultural Holdings Act of England on the statute books of this country. No set of laws will make a good tenant system. There are other things required, namely: (1) both landlords and tenants must have a high sense of justice which will lead to a mutual recognition of each other's rights, and (2) the science of agriculture as applied to a particular district must have arrived at that stage of development in which it is possible to make intelligent farming plans covering a period of years and to ascertain at all times what is right and fair in making settlements. Under the somewhat crude economic conditions that prevail in this country it would seem that the best plan for the landowner to follow is to get the opinion of the most experienced landlord available, and then spend some time in working out the terms of the proposed lease, that every point governing the tenancy is covered and each item is stated in language that is absolutely clear and unmistakable. The advice of a solicitor is necessary in interpreting the terms of the lease, but the thinking and planning of an expert agriculturist is far more fundamental and important. If the farm plans are wrought out and everything understood at the beginning there is less difficulty in securing the right kind of a tenant and usually no trouble in closing an agreement with him.

It is just as reasonable to suppose that farms can be successfully rented as it is that a city or town house or store or any other building with the land on which it stands can be rented on a basis agreeable to both owner and occupier. There is this difference, however, that by renting farm land an owner is not only providing a place to live and to do business, but he is supplying as well for the tenant the major portion of the capital re-



High-class livestock is always an inspiration to keep farm conditions up to a standard.

quired. Therefore, one of the first questions to be settled by the landowner is, what should be the rent? The rent proper should always correspond to the current rate of interest on long-term investments. There is no likelihood that the farm will run away. The investment is considered safe. No compensation for risk is to be added. The risk involved in buying farm lands is nil. It is true that the soil may be depleted of its fertility and the fields may become foul with weeds; but neither are at all necessary and result only when the system is wrong. The only question that should have any bearing on the amount of rent asked and paid on a given farm property is the cost of keeping buildings and fences in repair. If a farm with fair buildings is purchased for, say, $7,000, it should rent for 5 per cent. of the purchase price, and the tenant should pay the taxes, do the statute labor, and keep the buildings and fences in repair. Some owners make 6 per cent. the basis and undertake themselves to keep the buildings and fences in repair. This is not, as a rule, as good a plan as the 5 per cent. basis as the tenant by carelessness can easily double the annual cost of the upkeep of buildings and fences. Where the actual cash value of a farm is not easily ascertained the rent is often computed on a rate per acre. The rate frequently varies for rough land, pasture land, and plough land on the same farm. A farm of 100 acres, with fair buildings, worth approximately $7,000, should rent for at least $3 an acre. It might rent for $4 an acre, and be profitable to the tenant. Whatever method of renting a property-owner decides to adopt, he should first work out for himself the minimum rent he can afford to accept and then plan to that end.

Very often the success or failure of a renting proposition will depend on the personality of the tenant and his wife. People who are honest, industrious and thrifty make good tenants. Those who are grasping, shiftless and untidy ought not to be allowed to rent valuable farms. The more intelligent a tenant-farmer is the better. In these days a man who does not read agricultural journals and Government bulletins is very little use on the land except as a laborer. A tenant should have some capital. The writer has had experience with tenants who had capital to begin with and with tenants who had practically nothing. It is always a handicap to rent to men who cannot supply the necessary equipment to conduct their farming operations efficiently. In Great Britain a tenant-farmer must have sufficient capital to equip and manage economically the farm he rents. In this country there has been a great deal of cheap land available so men of small means have not had to rent farms, but could buy farms of their own. This fact has, no doubt, mitigated against successful tenant-farming in numerous instances.

So far it has seemed necessary to deal with general considerations that a few of the principles of tenant-farming may be understood; but from this on an effort will be made to answer the question submitted at the beginning. Assuming that the farm to be rented is fairly good soil, that it is suitably fenced and has reasonably good buildings, the plan of renting should be decided. The actual minimum rental in terms of cash should be determined, and the best method to secure this rental adopted. If the soil is wet and needs drainage, or if the buildings or fences are not in condition to enable a tenant to make a success of working the farm, it is only fair that the capital investment should be sufficiently increased to make the property revenue-producing. Often a few hundred dollars devoted to needed improvements will make satisfactory dividends possible from the whole investment. If the farm is in rentable condition or can be made so at small expense it should not be difficult to secure a tenant. There are two general methods or plans of renting farm lands, namely, cash tenancy and share tenancy. Which of the two methods should be adopted in a given instance will depend on the capital and skill possessed by the tenant and the presence or absence of the landowner. Cash tenancy is usually considered by economists as a step in advance of share tenancy. "This method of putting out lands to farm," says Turgot, a French writer, whose work was published in 1770, " is the most advantageous of all, both to the proprietors and to the cultivators; it establishes itself everywhere where there are rich cultivators in a position to make the advances of the cultivation; and as rich cultivators can provide the land with much more labor and manure, there results from it a prodigious increase in the produce and revenue of estates. In Picardy, Normandy, the neighborhood of Paris, and in most of the provinces of the north of France, the lands are cultivated by cash tenants. In the provinces of the south they are cultivated by share tenants; the provinces of the north of France are likewise incomparably richer and better cultivated than those of the south." Probably not more than a third of the tenant farmers in Canada and the United States pay cash rent. The reason is that share tenancy is preferred by many tenant-farmers because the risk is less than in cash tenancy. The thought of paying a fixed rent, whether the crop is large or small and whether the prices are high or low, is not attractive to the majority. Again, many of the tenants do not possess sufficient wealth to enable them to own all the stock necessary and to purchasse the machinery to operate a farm on a cash basis. The landowners who live in close proximity to the land which they let and who have time to devote to its supervision usually prefer a share of the crop, because they find it more profitable to them.

The owner has to look after such permanent improvements as the care and planting of trees.

The participation of the landlord in the management of the farm is the chief reason for the success of share tenancy in this country. Where the landlords live too far from their land or are too busy to give it the needed supervision they usually prefer to let their farms for a cash rent. It is claimed by many landlords that the tenants devote much greater care to their farming under the cash system of letting land. The difficulty is, as a rule, when the plan of cash tenancy is followed, the tenant is inclined to adopt the short-sighted policy of getting the utmost out of the land without any regard to the future. The system causes the landlord little trouble, but usually ends in soil exhaustion. The ideal plan of renting land would seem to be, share-tenancy with a completely worked-out system of crop rotation in order to reduce to a minimum the interference of the landowner with the tenant, or a cash tenancy under the more rigid system that prevails in Great Britain.

In Canada, tenancy usually means, and, perhaps, ought to mean, the stepping stone to land-ownership. While there are millions of acres of agricultural land awaiting the plough, and a comparatively small number of farmers, it is only natural that as soon as a man gets enough money to own and equip a farm he should buy one for himself; but if we had a proper system of land tenancy it is doubtful if tenants in comfortable circumstances would care to give up the conveniences of a settled community in close proximity to good markets and excellent intellectual and social opportunities for the hardships of land ownership on the frontier. It is advisable, therefore, to study the tenant problem in Eastern Canada not only for the benefit of the land owners, but for the benefit of the tenants and the community of which they form a part.

The tenant farmer is not living on a farm merely for the purpose of enjoying the pleasures of rural life. This seems to be the attitude of too many farmers who own their farms and are indifferent to progress. The tenant farmer is trying to make money. He should have the desire while he is making money and paying rent to keep up the fertility of the soil he cultivates and to keep in repair the fences and buildings which form a part of the farm equipment. The question is, how can he do all these things

at the same time? If he cannot there is something radically wrong with our agricultural science and practice and with our systems of letting land. The writer has had three tenants who came to him with very little capital and after working a farm of 150 acres for a few years were able to purchase farms of their own, and are now in comfortable circumstances. The present tenant on this farm owns a 50-acre farm close by and works the 200 acres under the one system. The agreement for share tenancy covering this undertaking fills three sheets of a printed form and has an insert of three sheets of typewritten matter of foolscap size. The general idea is that the owner and tenant are partners. The owner supplies the land, pays for permanent improvements, supplies lumber, nails, etc., for repairs, pays the taxes, and provides half of the cattle, sheep, swine and poultry to stock the farm. The tenant does all the work, supplies the horses and implements, does the road work, provides half of the live stock, pays half of the expenses for seed, fertilizers, machines in threshing, filling silos, etc., markets the produce and keeps the fences and buildings in repair. The revenue from the farm is equally divided, that is, everything grown or produced on the farm is equally divided. The details are all set out in the agreement, and each party knows exactly what is expected of him. But in addition the owner has worked out the crop rotation for ten years in advance so the tenant has the exact system of cultivation for each of the fields for each season before him in a typewritten document. The minimum number of cattle, sheep, swine, and poultry to be kept is stated in the agreement; but this number will be increased from year to year as the farm increases in fertility and the fodder and grain available permit.

With a good system of crop rotation the farm is kept clean and the soil does not lose its fertility. When the crops to be grown on each field are known well in advance, it is possible to keep the maximum number of live stock year after year. The work is well distributed throughout the season and the labor problem is simplified. The energy of the farmer is not used up trying to figure out catch crops and ways and means of providing fodder and grain for the stock; but are concentrated on getting of the largest possible results from every day's work and every pound of feed consumed. A farm of 150 acres with 130 acres under plough should, if devoted to dairy cows and swine yield a gross income of not less than $3,000 per annum. If there is any advantage in soil or location the income should be greater than this amount. On too many farms there is no system and the crop rotation is a farce. There is not so much difference in the productive capacity of soils as a great many people claim to believe. It is true that a poor farmer will secure better results from a good soil than from an inferior soil; but the real difference is in the crop rotation and methods of farm management employed.

Where the plan of cash tenancy is followed the skilled tenant farmer has a great advantage. The rent he pays is merely interest on the capital invested in the farm, and all in excess of this interest or rent, over and above his living is profit. The greater his skill the larger will be his profits. From the landowner's point of view it is necessary to point out and perhaps emphasize the necessity of allowing no tenant, whether working on a cash or share basis, to run a farm to please himself. The agreement should be so drawn that the tenant will be required to keep up the property and follow a rational rotation system. No grain, hay or straw should be sold off the farm and the minimum number of each class of live stock kept on the farm should be embodied in the lease. The crux of the whole matter of successful tenant-farming is to apply the Golden Rule; but as that is a little abstract for ordinary mortals to follow in matters of detail it is better to put the details in black and white and be sure that they are all included. When this is done and the tenant is honest and industrious there is no question about the success of tenant-farming.

Celery on Muck Soil

Getting Quick Growth from Late Planting

FIRST-CLASS muck for growing celery should be of brownish-black color. It should be friable and not too full of coarse pieces of wood. It seems to be an advantage to have this soil neutral, so if the soil responds to an acid test it may be well to apply lime at the rate of one to two tons an acre. This soil should be at least twelve to eighteen inches deep; if it is shallow the plant suffers during a drought. The water table should be about three feet below the surface.

Celery may be taken direct to the field from the greenhouse or hotbeds, provided the plants have been hardened gradually. Two or three weeks before the plants are transplanted it is advisable to spray with Bordeaux to prevent blight.

Marking out rows follows breaking the soil. Some growers mark out double rows, the distance between rows varying from seven to nine inches, the plants being spaced five to six inches apart, and two feet being allowed between the sets of double rows. Another system, which seems to be the better, is to make the rows eighteen inches apart, with the plants four to five inches apart in the rows. If the rows are twenty-four inches apart and the plants four inches apart in the row, about 65,000 plants are needed for an acre; if the rows are eighteen inches apart and the plants four inches apart in the row, about 87,000 plants are necessary.

The plants should be removed from the forcing structure with as much root surface as possible. They may be placed in marked rows with a dibble or trowel, care being exercised to have the roots well spread out.

A fertilizer containing four per cent. nitrogen, eight per cent. phosphoric acid and ten per cent. potash, at the rate of about 1,200 pounds to the acre, seems to give the best results, especially if it is supplemented with 150 pounds of nitrate of soda two or three times during the season. Some growers have even found it advisable to apply as high as three tons to the acre. The method of applying this fertilizer to the soil also varies. In some cases it is applied broadcast previous to planting, with a broad-casting machine or a fertilizer drill. In other cases it is applied with a drill to both rows. This fertilizer should be thoroughly harrowed into and mixed with the soil.

The plants should be given shallow cultivations frequently, at least five during the season being necessary. In place of cultivation, a new method known as the mulching method has been developed. Manure is placed over this soil to the depth of one to two inches. Other materials, such as leaves or straw, are sometimes substituted for this manure. This method saves the expense of cultivation.

Celery should be sprayed from the very first. It is troubled by early blight and late blight, which discolor the leaves, causing the plants to wilt quickly. These may be controlled if it is sprayed from five to seven times during the season. Celery has two other diseases: leaf spot and rust. Bordeaux mixture, applied often and thoroughly as suggested for the blight, will also control them.

Celery on muck lands is not troubled greatly by insects, though the zebra caterpillar and the celery looper are sometimes found.

The orchard is one of the features likely to suffer through neglect unless a workable arrangement provides for its care.

The Secret of Rest Inn

What One Woman Taught Another of the Joys of Common Things

By GENEVIEVE

It is possible that we make too much of the monotony of farm work, especially women's work. We forget, or perhaps we fail to see that the daily routine makes up the background of life without which its pleasures would be spiritless and blurred. Many women whose lives have seemed overfull of human struggles and commonplace tasks have discovered the lasting and enviable key to happiness in the joy of work well done. They have found the beauty of Nature through working with humble things and the romance of life through natural experiences. These women are not troubled with the proverbial unrest and discontent of the modern exotic.

REST INN—that was what the neighbors had learned to call it, but to the woman with tired nerves who had come in the night before it was nothing more than an old-fashioned farm house, with a worn path from the little gate across a wide scythe-mown lawn, with a lamp in the window and rag carpet on the parlor floor. Even though she had seen it first in the moonlight—real dewy moonlight, sifting through the trees—and she hadn't seen moonlight for years, excepting when she got away from the electric lights to the lake or a summer resort for a while, and then it was always spoiled with Chinese lanterns; it was just a farm house.

But then the woman had been on the train all day, and her nerves were worn out. That was why she had been sent here. The doctor had just said that she needed rest and quiet—that he knew an ideal retreat, a place in the country with fruit and eggs and cream, and all the regulation qualifications that don't amount to anything. Money can buy them in the city. Perhaps he didn't know the secret of Rest Inn himself, but experience had proved it to be a cure for "nerves"—the kind of nerves that come from finding a want in life and trying to fill it with things that fail to satisfy.

And the woman had tried a great many things, from Swiss lakes to Browning clubs, with no result other than a restless hunger for something real. In the bewilderment of her first dim moments of waking now, she covered the light-papered walls, the linen-covered dresser and the blue willow pitcher on the washstand with the same indifferent glance that had passed over hotel suites and staterooms until there seemed to be no new thing under lodging roofs. Somehow this was different. She had a faint recollection of a tawny-headed, low-voiced girl bringing in hot water and a pile of fresh towels the night before, and of a white-haired, motherly woman slipping in after the light was out to see if she was resting. Outside the window a canary darted to her nest in the lilac bush, and in the yard the same tawny-headed girl, brown-armed, broad-bosomed, was spreading white linen on the grass. The woman wondered vaguely how many hours of the early morning it had taken to get the lines fitted with all those clean things, sighed a little over the drudgery of it, and closed her eyes again.

An hour later she looked up from the dainty breakfast table under an apple tree, with more curiosity. In spite of her three hours at the washtub, the girl was unsoiled and unruffled. With quick, deft touches she brought bacon from their own curing, a loaf from their own oven, and berries fresh from their own vines. On the porch the mother was shelling peas with the speed cultivated by years of practice. She must have been at it for some time, for four earthen bowls stood heaped up on the window sill, and the occasional glance through the window screen guarded a boiler full of cans on the kitchen stove. No one seemed hurried; the bees hummed drowsily through the alyssum border; a far-reaching quiet was in the air. The place was a veritable Rest Inn, but there was an amazing lot of work going on.

All day the woman watched with growing wonder. She saw flour and cream and butter in the girl's skilled hands turned into flaky, brown-crusted pies. She saw the mother bring from storage in an old brick oven in the orchard a home-cured ham, dusty with yellow meal, and she attended with eager ears and nostrils to the slices sizzling in the hot pan. From her own little table in a screened end of the porch—for they seemed to think she preferred isolation—she saw the boys come in from the hay field at noon, tired and starving and happy. It was rather a novelty to see a family together at noon—and all interested in the same things. And after dinner, while the mother darned and patched and mended, the girl's swift iron flew back and forth pressing a gloss into the clean, sweet-smelling clothes. This was Rest Inn!

Twilight came down and a cool wind blew over the wheat fields. On the long porch the family gathered in the dusk, and their subdued voices carried at intervals to where the woman lay in a hammock watching the stars come out. They talked little, but there was evidently that tacit understanding among them that holds communion without words. They had grown together, and in the sympathy there was rest. Already the woman was beginning to feel the spell of it. Later some neighbors came in, and for an hour or two the quiet was broken by a frolic on the lawn and music in the parlor. When they had gone the girl sat down by her guest to see the moon rise.

"It's been a long day for you," said the woman; "you must be tired."

"Yes," came the answer dreamily; "the kind of tiredness that makes you rest."

"But the monotony of it—doing the same thing day after day! Do you keep this up all year?"

"No, we don't work such long hours all year. When the evenings are long we read a good deal together, and we take turns in going away somewhere every year, to where things are entirely different, but weariness always drives us back to Rest Inn. We have found one of the lasting joys of living to be just doing some work to help someone who can't work in the same way for themselves, and I know we would lose half of it without the discipline of the hard, steady grind.

"And it isn't monotonous. No two days are ever alike if you're looking for the new things. If I find my vision slipping some day—there's an old cow-path through the woods, with all the mystery of bird's nests and hazel bushes still new. I just follow the hills and hollows and turns of that, with the wind in my face and the wonderful stillness all around until I can see clearly again.

"When the monotony germ attacks mother, she puts on a white apron and takes a jar of currant jam and a pitcher of yeast to some of the neighbors. It doesn't matter much what she does. So long as it helps anyone it rests her. This seems to have been the substance of her creed in trying to make the lives of her children right and vigorous."

"But is it worth while? You are young and should have time to play and be happy. Your brothers should see the world and have a chance to try their strength."

The girl looked up with a rare smile. Perhaps the close intimacy with birds and trees and silent places had taught her that. "The boys haven't been shielded from the world," she said. "That is, they have gone out to see some of it, but they always come back. The world's pretty much the same all over. It's only Nature that has undiscovered wonders, and only a boy who is working with her from morning till night, who knows the long strain on the muscle holding the plow, the care of the cattle, the meeting of emergencies, who knows that his strength is helping someone else, can find these out."

"But you should have time to try your wings—you don't expect to stay here all your life. What then?"

"Then there will be another Rest Inn in the hills, with warmth and light and an open hearth, and little children, I hope, meeting life as we were taught to meet it. Do I seem to need time to be happy?" Suddenly the girl became very serious. "I believe you are tired. You came here to rest; let us teach you. It just means to discover the glorious things you can do when you get rid of the artificial idea that to be happy women should be protected from the big, glowing realities of life."

Harvest scene near the prairie home of the writer.

THE WILD FLOWERS OF CENTRAL ALBERTA.

By A. J. Welbourne.

Much has been written of the park-like appearance of this favored Province, and probably most of the readers of this magazine have mental pictures of our rolling lands with wooded bluffs and splendid watercourses.

But when the attractions of Alberta are summed up, its wealth of wild flowers should not be omitted,—for, from early Spring till late October, we have such a succession of bloom as would gladden the eye of the most ardent flower-lover. I know a window which looks East along a charming bit of road leading to a tiny church; it is shaded on the north side by a grove of poplars and it is perhaps owing to their kindly shelter that the grass on both sides is literally "blued" with countless violets almost as soon as the snow is gone. Shortly after, the same borders are starred with the blossom of the wild strawberry, which bears its fruit in late June. The pin-cherry, choke-cherry, Saskatoon, moose-berry and high-bush cranberry all bear lovely white blossoms in May; the high-bush cranberry is one of the snowball family.

The common yellow dandelion has become as much a nuisance here as in the East, especially to people trying to have nice, velvety lawns. The marsh marigold brightens every creek bank and bit of swamp land in this district with its golden cups and dark, shiny leaves.

Glorious, lavish June brings us wild roses, graceful blue-bells, wild buckwheat daisies, Indian paint-brushes, and dainty yellow moccasin flowers in abundance. The last named is a species of wild orchid, and is sometimes called "lady's slipper"; the same plant bears a pink blossom in some parts of British Columbia; wild columbine and honeysuckle add their share to the summer feast of beauty.

The Scotch thistle flourishes here,—not the Canada thistle, so troublesome in Eastern parts, but the stately embtem of the Land o' the Heather. The following rhyme claims an exalted origin for the thistle: I learned it from my Scottish mother:—

"When oor patron-saint, gude Andra
Descended frae the skies,
He brocht a thistle wi' him,
'Twas a plant o' muckle size.
He set it on the Hielan' hills
Whaur a' the warld could see,
An' said,—"Wow, but they'll no be wise
That meddle daur wi' thee."

We have a red lily here which resembles the garden orange lily, only rather smaller. The wild sunflower, though a beauty, is inclined to take possession where it is allowed a start. Black-eyed Susans and ox-eyed daisies, too, are good lookers, but are considered undesirables by farmers.

On sunny slopes the wild convolvulus runs riot, and its myriads of delicately-tinted, trumpet-shaped flowers form a charming contrast to the background of green leaves on which they rest. We always regret that these blossoms are so fragile; they will not bear handling.

Purple asters bloom in the hollows when the days begin to shorten, and, until late in the fall, we can find golden-rod, wild sage and fireweed with a few belated blossoms of some earlier kinds.

I have mentioned only a few of the most common of our wild flowers. There are many others, and our woods are full of ferns, vines and mosses, as beautiful as can be found anywhere, but they all must be seen to be appreciated.

On the Fighting Line in Riel's Day

Continued from Page 38.

men a rifle was discharged and the firing became general. Crozier ordered the men with the seven-pounder to action, but he was in the line of fire and they withheld the shell, though he reprimanded them afterwards for saving his life in ead of obeying orders. The rebels had the advantage of the situation, and, with a loss of six killed and a few wounded, they killed nine of the Prince Albert volunteers, three policemen and wounded twenty-five more. Crozier saw that the position was untenable and ordered his men to retire, which they did in good order, reaching Fort Carlton late in the afternoon. An hour afterwards Irvine arrived at the fort with 100 mounted men.

Fort Carlton was not worth defending and, indeed, was badly situated, as it was commanded by hills on two sides. All around the 'strict were Indian reserves and the rebels, flushed with their success at Duck Lake, might easily get them all on the warpath. So Col. Irvine decided to evacuate the fort and go to Prince Albert, which had a large population, but was now wholly defenceless in the midst of the disaffected area. He reached Prince Albert on March 28th and remained there till the close of the rebellion.

For this apparent inaction, the Mounted Police were criticised by ignorant armchair fault-lnders. But Irvine had to obey orders, and the orders were based upon a knowledge of the situation. Had the police been withdrawn from this locality, the rebels and their allies might have swooped down upon the inhabitants at any moment. Anyone who knows the character of the Indian, who has risen up and got a taste of victory, understands the lengths to which they might go in a community largely composed of women and children. Fortunately, the conduct of the Mounted Police all over the field during that troublesome time, as well as at all times before and after, has been of such a uniformly high and devoted order that they stand out in the verdict of history as one of the finest body of men in the world.

It is not generally known that Gabriel Dumont was wounded at the battle of Duck Lake. This was told me some time afterwards by Mr. Roger Goulet, one of the Government Commissioners appointed at the rebellion outbreak to settle the land claims of the malcontents. Goulet was a highly respected and efficient surveyor in Hudson's Bay Company days and knew all the men of that time intimately. "When Gabriel came before me," he said, "after the rebellion to make an affidavit, he had to remove his hat, and I saw that a furrow had been plowed along the top of his head. He told me that it had been done by a bullet at Duck Lake which had felled him stunned to the ground. It was a close call."

And Goulet added that he thought this bullet had checked Dumont's aggressive-

ness somewhat or the rebellion might have been more difficult to suppress. I confess I cannot see much evidence for that view, but rather think that the wound made Dumont a little more determined. From one who was with him I learned afterwards that, but for Riel's objection, he would have led a midnight rush on Middleton's camp the night before the Fish Creek fight. Those of us who spent many nights in such camps that summer know what that might have meant. A midnight rush from plainsmen who knew the ground and knew how to stampede the horses and mules and thus produce "confusion worse confounded," might have led almost to the annihilation of the column. And the desire to do it shows Dumont as both a fighter and a strategist of no mean ability. The success at Duck Lake had aroused both his ardor and his spirit of revenge.

And in our next article we shall note the resultant effects of that distressing field.

SHADE TREES FOR HORSES.

Shade trees are very useful in protecting horses from the heat. This fact has led at least one farmer to preserve a good tree in each field of his farm. He reports that years ago he had the usual trouble with delayed harvest work because of overheated horses. Resting in the sun did little good. Finally he tried taking the teams to the shade at intervals of an hour on very hot days, even if he had to go a quarter of a mile. A few minutes' rest were wonderfully refreshing, and the horses slowed down perceptibly in their panting. This experiment tried for a season worked so well that the practice was continued, and the horses are always taken to the shade when their labored breathing indicates that they are getting dangerously hot.

The former states that he found this not only was beneficial to the horses, but he was able to get more work from them; he could work them an hour or two longer during the day, and at the end they would be fresher than when they had no shade rest.

If anyone doubts the value of shade for a hot horse, let him try resting himself in the sun. One often sees a heated team sweltering under the broiling sun while the driver is enjoying the cooling breeze under a tree a few rods away. He would say that there is not really much difference in temperature between the two places, but he has not tested it. When the thermometer stands at 90 degrees in the shade with a slight breeze, it may stand at 120 degrees or even higher in the sun. A heated horse of about 100 degrees temperature will cool off much more rapidly in the 90-degree breeze than in the 120-degree dead air.

Results count, and the farmer quoted asserts that the scattered shade trees along his fence rows, at least one to a field, save horseflesh and make him money. He has never lost a horse from the heat, nor even had one overheated since he has followed the policy of taking his horses to the shade when they needed a rest.

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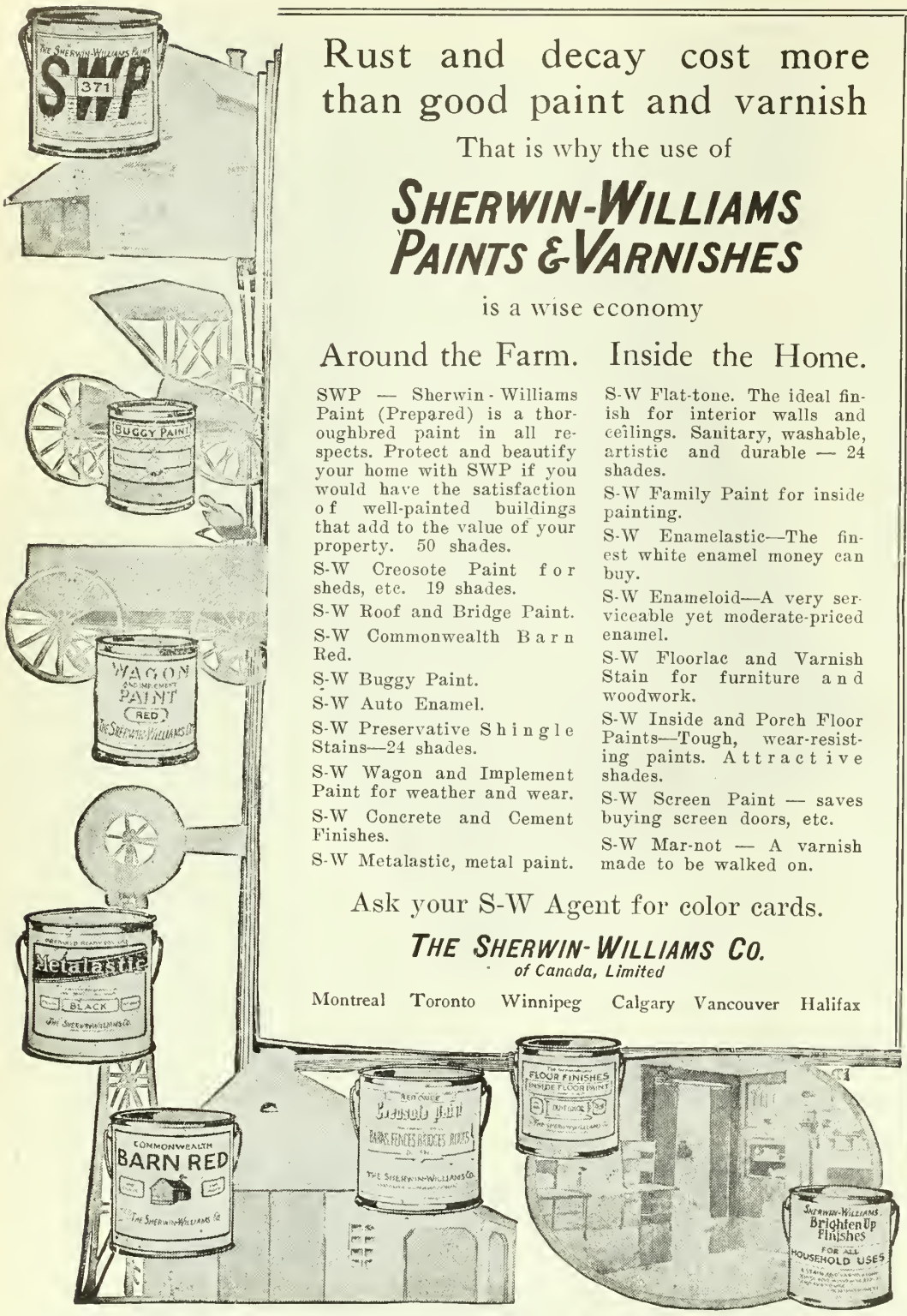

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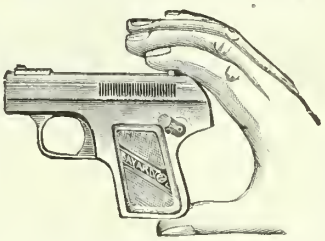

THE BABY AUTOMATICS

The **BAYARD** pistols possess, consequently, not only the advantage of being very handy, but they are at the same time extremely effective. These features make the **BAYARD** Pistols the Ideal Pocket Arms.

WRITE FOR DESCRIPTIVE BOOKLET

McGILL CUTLERY CO., Reg'd, P.O. BOX 580, MONTREAL

More Milking Shorthorns Wanted

Canadian Farmers Demanding a Cow that will Pay in Milk and Make Beef Profitably

THE Canadian live stock department states that 50 per cent. of the applications received during the past year for the loan of Shorthorn sires represented definite requests that bulls of milking strain be supplied, and a further statement is made that applications for Shorthorn bulls considerably exceeded in number those received for all other herds put together. In England during the past two or three years record prices for bulls and for cows of the milking Shorthorn have been paid both for home and export purposes. Leading herders of milking Shorthorns in the United States say that their business has been growing far beyond the possibilities of their herds, and even at the stiff prices obtainable they are not able to supply the demand for young breeding bulls.

These facts are significant. Why this cry for milk in the face of the urgent demand for beef? Possibly the demand is largely from the man who raises the steers. If this man has to debit his six-months-old calf with the keep of its dam, where is the profit to be obtained? It costs at least $50 to feed a cow for a year; add to this the services of the bull, risk and other incidential expenses, and the calf becomes an expensive commodity when the mother weans it. This is the crux of the whole situation.

The day of the free range is over. The future of beef-making depends upon the profit which can be made out of it by the man on the fenced farm. On high-priced land no dividend can be secured with cows that can do no more than raise their own calves. If herders of purebred cattle do not heed the judgment of the country upon this question, and lend their hands earnestly and consistently to the task that is now thrust upon them, we shall find the business of high-class beefmaking demoralized through the farmers resorting to the use of dairy sires to cross upon their cows—a process that already has begun in several districts.

Farmers at present demand a cow that will make beef profitably—a cow that will pay in milk, butter and beef. The nearest approach to such an animal is the English milking Shorthorn. "The present situation is certainly a triumph for Mr. Bate's foresight, skill and tenacity of purpose," says Mr. Arkell, Assistant Canadian Live Stock Commissioner. "His faith is being rewarded to-day in the demand for beef cattle that will milk."

The history of Scotch Shorthorns has paralleled the development of free land in the north and south American continents, and a new type of cattle is being demanded. The infusion of Bates' ideas into the breeding of Scotch cattle will represent the Shorthorn of the future.—J. A. MacDonald in *The Breeders' Gazette.*

Between Ourselves

A Question Drawer for Home Readers

By GENEVIEVE

HOW TO DRESS WELL AND ECONOMICALLY.

Q.—Would you kindly send me some ideas or clippings that would help me with a paper on "How to Dress Well and Economically." I have to prepare this for an Institute meeting.

Pearl H. C., Ont.

Answer—Your question was answered through the question drawer of our April number so we are sending you the clipping from that issue.

IS A WOMAN'S TIME WORTH ANYTHING?

Q.—I have to give a paper at our Institute meeting on the subject "Is a Woman's Time Worth Anything?" Would you please be so kind as to help me out?

Answer—We hope the ideas suggested may be of some help. We would also refer you to the article on page 37 of our July issue.

FOOD VALUE OF CEREALS.

Question—Can you give me the food composition of the common cereals, and of some of the prepared breakfast foods such as corn flakes, grape nuts, and shredded wheat? I think that we are inclined to use the cereals too sparingly, especially for children.

A.—The following table shows the composition of the most common cereals:—

	Water	Proteid	Fat	Carbo-hydrates	Cellulose	Mineral Matter
Wheat meal ..	12.1	12.9	1.9	10.3	1.6	1.2
Oatmeal	7.2	14.2	7.3	65.9	3.5	1.9
Pearl barley...	12.7	7.4	1.2	76.7	0.8	1.2
Cornmeal	11.4	8.5	4.6	72.8	1.4	1.3
Buckwheat flour	14.0	7.1	1.2	75.9	0.6	1.2
Rice	11.7	7.9	0.5	79.5	...	0.4

Corn Flakes consist of cooked corn which has been treated with malt honey, dried, rolled and baked. Its nutritive value is about equal to that of corn-meal. Shredded Wheat is a preparation of whole wheat in the form of shreds or flakes, which have been cooked to the consistency of a biscuit. It represents the whole grain in a very digestible form. Grape Nuts is another malted preparation of the entire wheat, which requires no cooking. Its composition is about as follows: Water 6 per cent., proteid 12 per cent., carbohydrate 80 per cent., mineral matter 2 per cent.

On account of the mineral matter which they contain, cereals are among the best foods for growing children. And it is a mistake to think the prepared breakfast foods of low nutritive value, especially where you have an abundance of rich milk. Their convenience is worth something and often children who do not like porridge are very fond of these.

BUILDING WITH COBBLESTONES.

Question—I have been very interested in your plans of farm houses which have appeared in *The Farmer's Magazine*. I am going to build, and I have been for the last two years gathering ideas which I would like to incorporate in the building. My plan is to have an empty cigar box and every item of interest in house building I cut out and put into that box. So when it comes to making the final plans, nothing will be omitted which I would like to have.

I think this method of preserving cuttings should be adopted by every farmer using a separate box for each subject such as poultry, sheep, dairy cows, farm implements and advertisements of useful articles which we perhaps do not need to buy now but contemplate buying later. By this method, old, out of date cuttings, can be destroyed, and at any time one can refresh his memory by reference to the box, which should be duly labelled. Also recipes such as appear in *The Farmer's Magazine* for household use.

How thick should a wall of cobblestones be made in order to be strong? The wall I contemplate would be twenty feet high —ten feet for cellar and ten feet for one storey building. It is dangerous to build more than one storey here on account of severe winds. Cobblestones are procurable here at no cost except one's time to haul them, and I have often thought of them as the most natural building material to employ—if they give sufficient strength to a wall.

Are the round stones used in the inside of a wall, or should they be broken to make sharp edges so that they will hold together better in the cement? I would use strapping and lath in the interior to avoid dampness. Is a "damp course" necessary when building with cobblestones?

I am building also a bank-barn 18 feet by 68 feet and 10 feet high inside, with a superstructure of corrugated galvanized iron, 36 feet by 68 feet. Would cobblestones do for the walls of the bank-barn? Would they have sufficient retaining power to resist any pressure of the banks? It seems to me that to build with cobblestones has the great advantage of being a one-man job. To build with concrete means great expense for timber, for labor, etc. But a man can build alone and single-handed with cobblestones.

H. R., Alta.

Answer—An experienced builder informs us that a wall such as you think of building should be about 18 in. thick below ground and 14 in. thick above. The stones had better be broken and if large enough, made with a flat face for the inside of the wall to hold the strapping. For strength build in a wall strip every two feet of the height to nail the strap-

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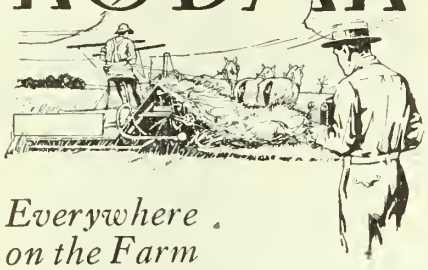

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ping to. A "damp course" is necessary. Use two ply ready roofing and put it at grade level. For the barn a stone wall such as you mention would do, made the same thickness as the walls of the house. In mixing the mortar use cement mixed with sand, taking four barrows of sharp sand to two bags of cement. Don't use lime water. If building with field stone, there should be in every square yard at least one stone that will go right through the wall.

Our Pattern Pages

Patterns will be sent Post Free on Receipt of Price. Address Pattern Department, Farmer's Magazine, 143-149 University Avenue, Toronto

6771

6771—LADY'S DRESS.

This frock is simple enough for a house dress and dressy enough for the street. The upper end of the sleeve forms a shoulder yoke and the lower portion of the blouse is plain and full. There is a small ornamental collar. The skirt, a one-piece model, has a straight lower edge and is therefore especially good for bordered materials, although plain fabrics are equally appropriate.

The dress pattern, No. 6771, is cut in sizes 34 to 44 inches bust measure. Medium size requires of material with border 3¾ yards of 46-inch or wider; without border and with seam at back of skirt 4¼ yards of 44-inch goods.

This pattern can be obtained by sending 15 cents to the office of this paper.

6762

6762—CHILD'S DRESS.

In this dainty frock there is the long seam down the shoulder and outer arm, dividing the sleeve and body into two parts. In addition the front is again divided by the line of closing, which has an ornamental tab near the neck. This is round and is trimmed with a small collar or left untrimmed as preferred. The skirt has a straight lower edge and may be either plaited or gathered.

The pattern, 6762, is cut in sizes 2, 4, 6 and 8 years. Medium size requires 2¼ yards of 36-inch material and ½-yard of 27-inch contrasting goods. Price of pattern, 10 cents.

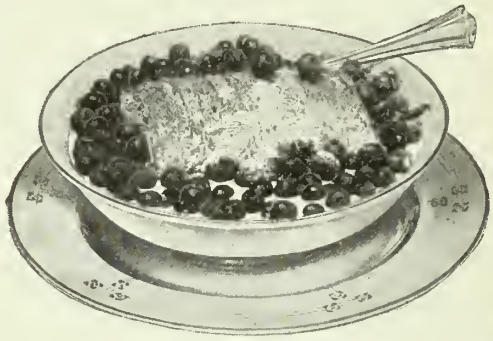
6753—LADY'S HOUSE DRESS.

This gown is cut on the simplest lines possible. It has a small tuck at each shoulder and a front closing, with a tab at the fastening. Long or short sleeves may be used and the five-gored skirt may have either the raised or regulation waistline. Such materials as gingham, cotton voile, cambric, challis and cashmere are used for these dresses.

The pattern 6753 is cut in sizes 34 to 44 inches bust measure. Medium size requires 4½ yards of 36-inch material. Price of pattern, 15 cents.

Safety in Summer

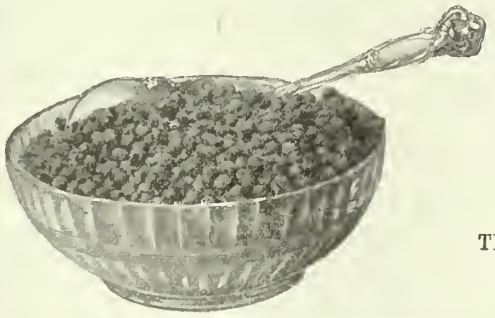
comes from a wise selection of easily digested foods which supply the maximum of nutriment with the least tax upon the digestive organs.



Food follies in Summer lower vitality, decrease efficiency and cause damages that are not easily repaired. The ideal diet for the sultry days is

Shredded Wheat

with fresh fruit and green vegetables — a combination that is wholesome, cooling and satisfying and that supplies all the strength needed for work or play and keeps the alimentary tract in healthy condition.



Shredded Wheat is deliciously nourishing for breakfast with milk or cream or for any meal in combination with huckleberries, raspberries or other fruits. Heat one or more Biscuits in the oven to restore crispness; then cover with berries and serve with sugar and cream.

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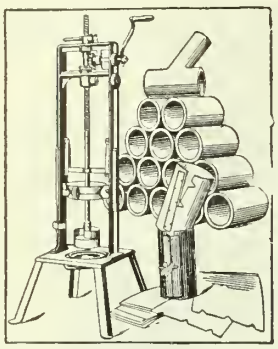

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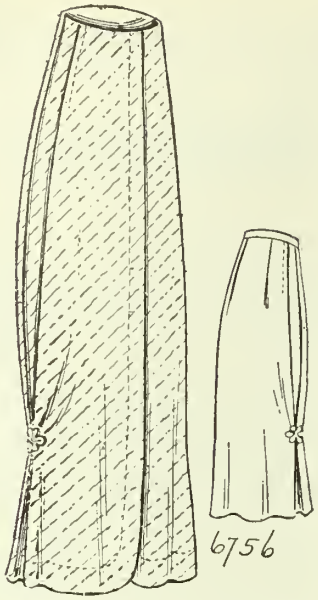

6756—LADY'S SKIRT.

Simple and ornamental, this skirt is cut in a single piece. It has a center front closing, with an overlapping seam, while two plaits at each side extend a few inches on each hip and provide a little fullness which is drawn in again at the knee. The waistline may be high or regulation.

The pattern 6756 is cut in sizes 22 to 32 inches waist measure. Medium size requires cut crosswise of material, without seam at back, 2 yards of 50 or 54-inch material. Price of pattern, 15 cents.

6765—LADY'S SHIRT WAIST.

This is one of the plainer models, with a short tuck at each shoulder in front, and with plain back. The closing is at the left of the center in front, and the neck is cut out in a shallow V, trimmed with a small, turnover collar. The sleeves are inserted with a regulation seam and may be either short or long.

The waist pattern, No. 6765, is cut in sizes 34 to 44 inches bust measure. Medium size requires 2½ yards of 36-inch material.

This pattern can be obtained by sending 15 cents to the office of this paper.

Making and Using a Fireless Cooker

How It Saves Fuel, Time and Temper—Its Construction and Care Explained

By JEAN MACKENZIE

WHO does not long to be free of the drudgery of the kitchen these hot days? Doesn't the idea of preparing foods for cooking, putting them into a haybox, and leaving it to its own devices, while you rest, read, sew, or visit, appeal to you? Those who have fireless cookers, and have found out what they will do, know that this is no "pipe-dream," but sober fact. Almost all dishes cooked usually by boiling or steaming, and many baked ones as well, such as soups, boiled vegetables, puddings, and eggs, can be cooked to advantage in a hay-box. It is true that such dishes as broiled meats, baked bread and biscuits, and toast and griddle cakes cannot be cooked in the fireless cooker, as these require cooking by brisk heat, though roast meat can be cooked first in the oven, and finished in the cooker, or cooked until nearly done in the cooker, and then crisped in a hot oven before coming to the table.

The underlying principle of the fireless cooker is the retention of heat, the heat which is usually radiated from the sides of the cooking utensil, and escaping steam. If this heat and steam which are wasted in the ordinary operation of cooking could be retained, the food would go on cooking in the absence of the fire. Hay, or any other non-conductor of heat, if packed closely around a kettle of boiling food, will maintain a temperature high enough to continue the cooking process for a number of hours. The home-made fireless coker is very simple of construction and quite inexpensive. There are many fireless cookers and hay-boxes to be found on the market, and in some respects are to be preferred to those home-made ones, but they have their disadvantages as well. They are much more expensive for one thing, and the choice of shapes and material for the utensils is not as great as in the home-made boxes.

The materials required for a home-made cooker are:

A stout box or barrel,

Strong hinges and a hasp for closing box,
Material for stuffing,
One or more large pails,
One or more small pails or pans,
Heavy paste-board,
Pliable paste-board,
Brown paper,
Muslin, 1½ yards or more according to the size,
Tacks and screws.

The materials suitable for stuffing the box are of two classes, those which may be used without any covering, such as hay, excelsior and paper, and those which require a covering material, some of these being wool, mineral wool, sawdust, cotton, and cork.

The box may be obtained from any shop, or an old trunk or chest can be used. See that it is of sufficient heavy construction to admit of having hinges and a hasp put on it. It may be covered with chintz or denim, or a coat of paint, as preferred. If you cook in large quantities, a barrel may be used to hold large kettles, but the cover must be strongly hinged and weighted as well. The box must be four or five inches larger every way than the pail it contains, so, though it may seem like putting the cart before the horse, select your utensils before making the box. The shape is very important, it is best to have a pail the depth of its own diameter, so as to have the least possible radiating surface. The sides should be straight and perpendicular to the bottom and the cover must fit securely. If a pan is to be used inside the pail, it must not be so high that the lid of the pail will not go on. The best material for fireless cooker utensils are agate ware, and ordinary or cast aluminum. The initial cost of the latter is high, but it will be found cheaper in the end, for it outlasts any other ware, and its light weight and excellently-fitting parts also recommend it. Never use iron or old tin-ware in the cooker, as they will rust with the long heat and moisture. Earthen-ware is good in the cooker, but cannot stand the intense heat necessary before putting the foods into the box.

HOW TO PACK THE BOX.

If the first class of material is to be used, line box and cover smoothly with one thickness of heavy paper, or several of newspaper. This is to prevent cold air from sifting in, or fragments of the packing material from dripping out. Asbestos is good for lining too, if you have any on hand. Pack in the bottom of the box a firm layer of insulating material, not less than three or four inches in depth. This must raise the cooking pail to within four or five inches of the top of the box. Set the pail in the middle of the box, on top of this layer, and pack the hay, or whatever material used, around it very tightly, until level with the top of the kettle. When it is removed it will leave a hole just large enough for it to go into again. A little manipulation will smooth down the ragged edges of this pocket. A cushion packed with hay or excelsior should now be made to fill space between the pail and top of the box, and must be at least four inches thick. If packing with paper, lay an even layer of folded papers four inches thick in the bottom of the box, then fill

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Douglas, Manitoba, got 16 orders in 2 days. Myers, Wis., $250 profit first month.
McCutcheon, Sask., says can sell 15 in less than 3 days.

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the space around the pail with soft crumpled papers. If the cover of the pail used is perfectly flat, fill space above pail with papers folded to fit, if it is not flat, make a soft cushion first, then put folded papers.

The box is now ready for use, but if the material should shrink away from the pail after using once or twice, the box must be filled up tightly again. There should be no space around the pail, and there should be a slight pressure always when the lid of the box is shut.

If materials that require a cover are to be used, the method of packing is slightly different. Line the box with paper or asbestos, tacking it into place. Now pack a layer of the insulating material four inches thick, in the bottom of the box, then lay a piece of heavy paper over this. Sew two or three pieces of pliable cardboard into the form of a cyliner that will fit loosely around the pail, and just the height of the pail. Set cooker pail surrounded by the cylinder on the layer in the box. Hold the kettle in place with one hand, and pack tightly around it to the top of the pail. Be very careful about this packing, for the success of the box depends upon it. Now take a sheet of very heavy paper, at least an inch larger in every way than the top of the box. Draw a circle in the center of the paper the size of the top of the pail. In the center of this circle cut a small hole large enough to insert the blade of a pair of scissors. From this hole, cut to the circle, striking it every inch and a half. Fit this paper over the packing in the box, so that the circle comes over the nest for the pail, formed by the cardboard cylinder. Put the pail down into nest, and it will crease the points down into the right place. This paper covering is preferable to the cloth one, as it is very easily made, and can be readily replaced when soiled. The box may be partitioned in the middle and two compartments be fitted up.

Success in using the fireless cooker is sure if one understands the operation of it, and the reason for the directions given. In the first place, as the cooking process is due to the retention of heat, it stands to reason that there must be heat to retain. Also, the total quantity of food has a good deal to do with the success of the cooking, for a small amount of food has not so much heat to begin with as a larger one, and loses it much faster. It is a mistake, therefore, to try to cook a very small quantity of food, as it does not contain sufficient heat to start with, to continue the cooking.

The proportion between the amount of food and the size of the kettle used is important. A well-filled kettle will cook more successfully than one only partly filled. If it is out of question to use a small pail and the space-adjuster, use a pudding pan, set into the cooker-pail, and resting on the rim. Then fill the lower part of the pail with either boiling water or boiling food.

Space between the kettle and the packing of the box must also be avoided, always have the box packed tightly as possible. Never try to use a small pail in a nest made for a large one, without the space-adjuster.

It is very important that no time be

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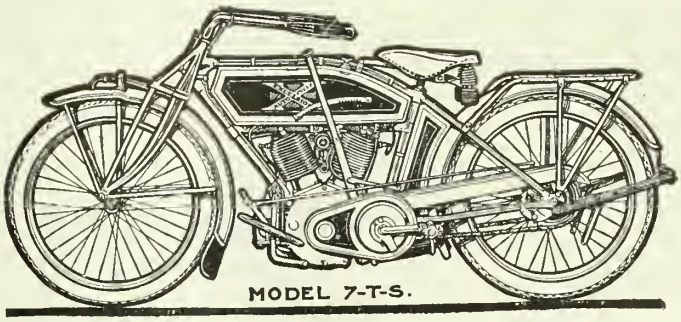

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lost in transferring the food from the stove to the box, so have the cooker placed right beside the stove, with the cover open, and the cushion close at hand, ready to place on top of the kettle as soon as it is in. The kettle should be in place in the box before it has had time to stop boiling.

Never open the box from the time it is filled, until the food is cooked. Or if, for any reason, the box must be opened, the food must be reheated to boiling point before being shut up again.

The time for cooking the food on the stove, prior to putting it into the box, is very short, as a rule. The food must be cooked until thoroughly heated to the center, therefore the larger the pieces are the longer the cooking necessary. Foods that are broken in small pieces need only a minute's brisk boiling before putting into the cooker. Cereals must be cooked until fairly well thickened, or they will settle into a dense mass at the bottom ofthe dish during the long, slow cooking.

The length of time for foods to cook in the fireless cooker depends upon several things: first, the cooker, whether well or badly packed, and the insulating material used; then upon the time spent in getting food from stove to cooker; upon the amount, the toughness, and the sizes of the pieces of food; and lastly upon whether hard or soft water is used. Foods take a longer time when hard water is used than soft. A little baking soda may be added to hard water to soften it.

There are many things to be said in favor of the fireless cooker. The chief of these is its economy. This lies not only in its saving of fuel, but of time, labor, utensils, and food materials and flavor. The fuel saving is more marked where gas, electricity, or kerosene are used, than with coal and wood, but the saving is considerable even in the latter case. To realize the saving in work, you must use the cooker, that is all. Also, utensils are much more easily cleaned when they have been used in the hay-box, than when they have had food dried or burnt on over a hot fire, and they last much longer when they are spared scraping and scouring. Then nothing is lost by evaporation, and "left overs" which require long, slow cooking to render them palatable, may be used up cheaply, as there is no extra fuel needed to offset the saving.

The entire absence of heat and odors in the kitchen is another point in favor of the fireless cooker.

There is a distinct gain in flavor, too, when the steam is retained in the vessel, and it has been proved conclusively that well-flavored food is more easily, as well as more thoroughly, digested than tasteless food, as dishes cooked in this way are more desirable than those done in the old-fashioned manner.

Lastly, the fireless cooker goes far toward solving the vexing servant problem. When the cooking of three meals a day is so simplified that it no longer ties one to the kitchen for a great part of the day, tends to dishevel one's person and ruffle one's temper, the servant is no longer a necessity in the average home, and the money consumed by her wages, board and waste, may be spent much more profitably.

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Rabbits—A Business for the Boy

Continued from Page 26.

strength and vitality, and her progeny are weakened. The period of gestation is from twenty-eight to thirty-three days, generally thirty-one. Bucks should not be housed with does. If given the opportunity they will destroy a doe's offspring at parturition. In mating the doe should be placed in the buck's hut.

In different varieties different things are bred for, and these the beginner should ascertain of the breeder from whom he purchases. Lops are bred chiefly for length of ear, Dutch rabbits for the blaze and the collar, Himalayan rabbits for the dark markings, the Belgian hare for color, the Angora for quality of wood, the Silver Tribes for silvering, and so on. Condition and size are generally given ten points in a scale of 100. Eyes are commonly credited with five points.

A year after the purchase of his parent stock, the boy, if he has been conscientious, will be able to sell young stock in quantities. There will be a market at first among his schoolmates—he should let them all know he is in the rabbit business. He should branch out gradually, selling slowly, always keeping his best specimens for breeding purposes. When his rabbitry is large he will keep a standing advertisement in his home weekly and a poultry periodical. It will read like this:

> DUTCH RABBITS.—Gentle little beauties, blue and whites prettily marked, 10 weeks old, 50c each, trio $1.40. Older stock for sale. List. Leslie Bright, Stoneham.

If the young rabbit-keeper lives in the city, or a suburb, he may profitably advertise occasionally in one of the city dailies. He will soon find if it pulls. The writer knows of a Vancouver breeder who has consistently over many months used advantageously the "For Sale" columns of all four Vancouver dailies. Sometimes he appends his 'phone number and sometimes merely his address. One of his advertisements which brought good results was this:

> FOR SALE.—This week only, young Belgian hares and Polish rabbits, 2 mos. old, 25c each.

The boy in the small town is able, generally, to get free advertising in the home weekly. When his Polish buck drives away a cat which has entered his pen, when the prize-winning Angora gives birth to a litter of fourteen, or when some other out-of-the-ordinary event transpires in the rabbitry, the boy should tell the local editor or the local correspondent, who will usually gladly make of it a news item.

The most valuable publicity is sometimes the cheapest. Let the young rabbit-keeper always enter specimens at the district fairs and the pet stock shows. If he wins prizes, as he should, and remains near his entries, talking about them to interested boys and parents, he will take many orders and locate many prospects.

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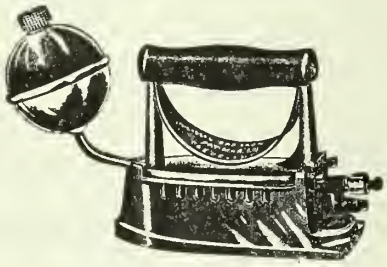
Send a post card with your name and address, giving the name of the paper in which you read this offer, and we will arrange to have an "Ideal" Iron left with you for a ten days' free trial. No obligation. If you like the iron you will want to buy it.



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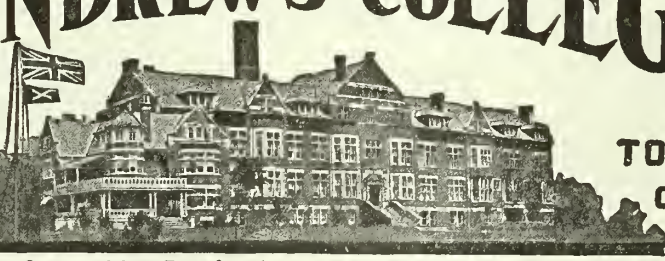

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National Affairs: The Men Around the White Plume

Continued from Page 25.

macy for them. They "want what they want when they want it." They speak in strong, strident tones. They talk in italics and capitals—all emphasis. They force, rather than win, their trail-blazing way. All but one.

"Take care of that man," said Disraeli, of Bismarck, on one occasion, "he means what he says." That is the strength of Dr. Michael Clark, the eloquent British-born Canadian from Red Deer. His devotion to his end—not the devotion of a fanatic who is sustained by the glow of passionate enthusiasm, but the practical, businesslike determination of an engineer who has a certain amount of tunneling to do—is one great secret of his power. When Peter the Great saw his semi-barbarous Muscovites driven from field after field by the Swedish veterans, he rejoiced and took courage; "for," said he, "in the end they will teach us the art of war." Dr. Clark is not an opportunist. He thrives in and on opposition. His theories are frequently pilloried and assailed, but it does not disturb his equanimity, nor shake his conviction. He thinks out his own scheme of political philosophy and applies it to the body politic. But he is no mere doctrinaire. He is intensely practical, willing to bide the proper time, but with a deep underlying faith in the triumph of every right.

Michael Clark is a reformer, not a revolutionist. He does not thunder, but wins by the saving grace of humor. He seldom seeks to annihilate an opponent. He prefers to attract—with a smile. He is ready at repartee, quick to avail himself of interruption. He glories in the rapid interchange, with a true Britisher's appreciation of the value—and opportunity —of "heckling."

"Thick as berries in Kazubazuza," declared Sir George E. Foster, using one of his striking similies in the course of a fiscal debate.

"Ah," quoth Red Michael, "doubtless one of the places where my honorable friend, the Minister of Trade and Commerce, is seeking markets."

On one memorable occasion the mantle of self-control seemed to slip from his shoulders. The apostle of peace suddenly became a prophet of doom. He raised his voice; he shook his arms; he poured forth burning words of indignation and anathema. He arraigned the administration. He denounced. He railed.

"My honorable friend from Red Deer speaks in passion," observed the Prime Minister quietly, in the pause which followed a particularly scorching sentence.

In a flash the man's face changed. The tense, taut grimness dissipated into a solemn and settled melancholia.

"My right honorable friend makes a slight unfortunate omission," Dr. Clark

responded in plaintive tones. "I speak of this Government in *com*-passion."

A RADICAL BY TEMPERAMENT.

It is a far call from the decorum of the old school Presbyterian manse to the hurly-burly of the modern Canadian political warfare. But two young Westerners have traveled the distance, Knowles, of Moose Jaw, and Martin, of Regina. Lord Morley once described himself as "a cautious Whig by temperament, a Liberal by education, and a Radical by observation and experience." And temperament, in the long run, was stronger than anything else. William Erskine Knowles, son of the manse, is a cautious Conservative by up-bringing, a Liberal by experience, but a Radical by temperament. Add to this fact his nationality—both his parents were Irish—and one understands what has changed the book-loving divinity student of somewhat more than a decade ago into the ardent, dauntless and militant parliamentarian of to-day.

It is curious how little the public estimation of public men accords with their

Michael Clark in a field of the famous "Wee MacGregor" potatoes on his own land.

real character, as it is known to their intimates. Everybody thinks he knows Knowles. In reality, the real Knowles is as different from the supposed Knowles as the real Laurier is from the bloodthirsty ogre of the Nationalist pre-election romance. The restless active Western spirit has enveloped him, but the old Eastern love of the library remains. He retains his devotion to his books, his keen perception of the beauties of expression, which is almost a genius for rhythm, while deep within him burns that celestial fire of passion without which poetry is but as the tinkling cymbal.

But, nevertheless, the young Irish-Canadian—he is still in the sunny forties and is a native of Alliston, Ontario—found himself "at home" in the clash and clang of parliamentary battle. He was never one of those who "like the drab men best." He responds to the purple patches—he is attracted, rather than repelled,

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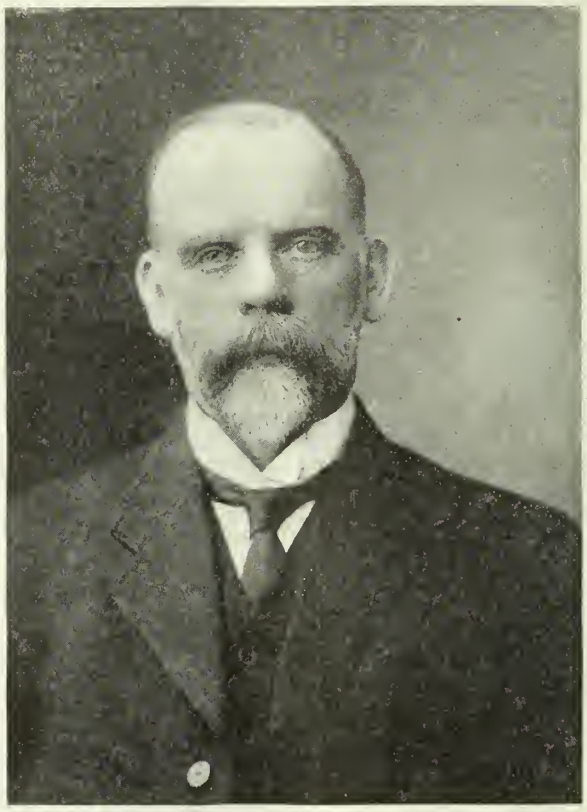
but the men whose heroic or adventurous career makes them stand out from the canvas like scarlet figures in a great painting. He has no morbid horror of violence. He was restless and ill at ease as a curbed and reined supporter of Government. He has come into his own in Opposition. He is a legalist but, if necessary, he is ready to trample upon your parchments without at all feeling that he is offending against the law of things. Whatever won for Knowles his huge majority in Moose Jaw, it was not demagogy, flattery or any other homange to the false gods of the market place.

"That detestable Lloyd George from the prairies," was the vitriolic response of a member from the Government side, when asked by a colleague in the Government lobby as to who was speaking in the House. William Martin, the young member for Regina, was "up." William Martin is everything that a certain class abhors; everything that it holds a public man ought not to be. He is radical, assertive, persistent and concerned primarily with the proletariat. He will never take tradition for granted, nor make obeisance to the established order of things. And he has all the ardent intensity of the knight of old in couching his lance in an unpopular cause. Young Martin has made the battles of the big new West his own. He looks through its eyes. He has seen its vision. He is concerned with the aspirations of its cosmopolitan citizenship. In debate he is dangerous. He thinks fast. Men who think slowly and deliberately seem to think consecutively; men who think rapidly are apt to be accused of want of steady application and concentration of the mind. Martin's mind darts hither and thither in a fashion perfectly bewildering to those whose mental evolutions are more slow and cumbrous. He goes full steam ahead, his consuming activity driving him through all obstacles as a steamer drives through the stormy sea.



Michael Clark is a reformer, not a revolutionist. He is called "Red Michael" in the House.

Yet his is no mere mob oratory. The vast vocabulary, the nimbleness with which he seizes the inevitable word at the right time, the resonance of the voice, and the fine physique would all fail him were his speeches not fortified with something more substantial, something more essential. Like R. B. Bennett, his verbiage resembles Niagara. It falls from his lips like a torrent. But there is always artistry of diction, and keen incisiveness of phrase. The expression of his ideas gains force and energy from his aspect while expressing them. He believes what he says.

THE BRILLIANT "BABY" OF THE HOUSE.

If, by some strange turn of the political wheel of fortune, the Liberal party suddenly found itself in power, the new Solicitor-General would probably be George Henry Boivin, of Shefford, Quebec, the "baby member" of the House of Commons. What Hon. Arthur Meighen is to the Conservatives this young French-Canadian — he is barely thirty — gives promise of becoming for the Liberals. He has scholarship, ambition, brains, eloquence, a serious bent for politics, and the ideals of youth. The office of Solicitor-General simply gravitated to Meighen. He was first for the position, and there were no seconds. With a little more experience, Boivin will occupy a similar place in the ranks of the Opposition. At college, in the study of law, and in the House of Commons, Boivin has had a brilliant record.

An incident in his early life, and one which it is rumored first brought him to the attention of Sir Wilfrid Laurier, is the best possible sidelight on his character. His mother, who was Irish of the Irish, and whose Celtic traits her son has strongly inherited, died shortly after his birth, and three years later his French-Canadian father followed her. The young orphan was a fine youngster, and became the pet of the kind-hearted people of Granby, Quebec, where a goodly portion of the population are Irish and Scotch. An old lady became specially interested in the boy, and often as he passed her modest home on his way to and from school she would treat him to cake, fruit and candy. The years went by; Boivin had gone to college, had had a brilliant career at historic Laval and was

now a full-fledged barrister. He had not been admitted to the bar more than a few weeks when his first big case was handed to him by the kindly old lady who in his schoolboy days had been his steadfast friend. It was an important case, one which involved the ownership of considerable property, and the young lawyer hesitated before taking it. The woman, however, had infinite confidence in the stripling and insisted that he take the brief. Boivin then accepted the case, fought a long legal battle against one of the most experienced counsel in Eastern Quebec, and won. Delighted at the outcome—for defeat would have meant her financial ruin—the woman almost immediately demanded that Boivin present his bill. This he just as promptly did—receipted! When she protested he declared he had only in small measure repaid the generosity which had meant so much to him in his orphaned schooldays. In this he remained steadfast, and refused to take even a cent for his services.

His success in the practice of his profession was instantaneous, and he soon became known throughout the Eastern Townships. At Laval he had been president of the Liberal Students' Association. It was quite natural, therefore, that he should be active in politics in the town in which he practised law, and he soon became recognized as an eloquent and convincing platform speaker. In 1911, when Sir Wilfrid Laurier was casting about for a standard-bearer for the Liberals in Shefford, which is regarded as a Conservative constituency, his attention was called to Boivin—then twenty-eight years of age. Sir Wilfrid learned of the young man's record, of his splendid reputation in the county, of his eloquence both in French and English. He sought a conference; and, as a result of an hour's talk with the Liberal chief, Boivin decided to make the fight in Shefford. He carried the county after a whirlwind campaign by a majority of twenty-seven votes.

Boivin took his place amongst the effective forces of Parliament last year by a single speech on the naval issue. When men like Pugsley, Meighen, Laurier, Borden and Carvall were fighting for supremacy with every known weapon of constitutional and parliamentary law, Boivin came to the forefront, displaying a skill in debate and a knowledge of the rules of procedure that astonished his most ardent admirers. Such a success did he become in the course of a few days that the Opposition put him up to reply to Meighen's masterly defence of the closure, a task in the performance of which he added to his fast-growing reputation.

Associated with Boivin is a galaxy of young French-Canadian Liberals who are climbing to the front. Hon. Dr. Henri Beland, who for three short weeks before the 1911 deluge held the post of Postmaster-General, is also destined for big things. As a speaker he is a wizard, combining a quiet humor with an effective presentation of his case. Jacques Bureau, "Joe" Demers, big Edward Lapointe and genial "Charlie" Wilson, whose English name denies his French ancestry, form a

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335 BRANCHES THROUGHOUT CANADA.

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Where Building Costs Get First Consideration, Keen Business Men Choose ASBESTOSLATE Roofs

You may be sure the Montreal Cotton Co. did not choose Asbestoslate for the roofs of these operatives' cottages without abundant proof that it pays in the long run. Though Asbestoslate costs a little more at first than wooden shingles, metal or prepared roofings, it really costs far less per year of service. While the latter steadily deteriorate and demand frequent repairs and all too quick renewal, ASBESTOSLATE simply gets tougher and more impervious with years of exposure as the cement in it hardens. Without paint or attention, an ASBESTOSLATE roof will last as long as the building stands. Besides, it is handsome and absolutely fireproof.

Write for a sample of ASBESTOSLATE and Booklet F., giving full particulars and prices.

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Address E-T. Bank Building, 263 St. James Street, Montreal
Factory at Lachine, P.Q. (near Montreal)

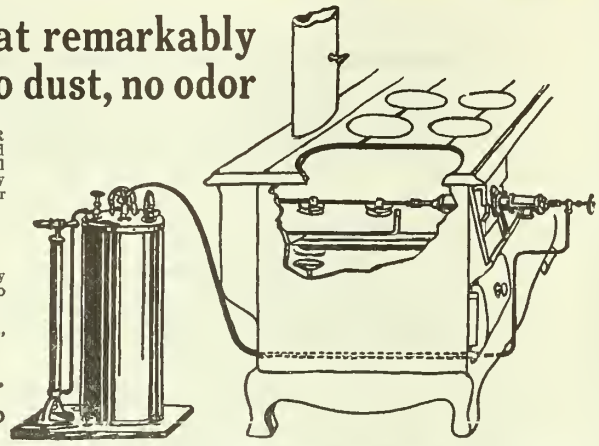
THIS INVESTMENT

HAS PAID SEVEN PER CENT. PER ANNUM

half-yearly, since the Securities of this corporation have been placed on the market 10 years ago. Business established 28 years. Investment may be withdrawn in part or whole at any time after one year. Safe as a mortgage. *Write at once for full particulars and booklet.*

NATIONAL SECURITIES CORPORATION LIMITED
CONFEDERATION LIFE BUILDING - - TORONTO, ONTARIO

Cooking and Heating at remarkably low cost—no ashes, no dust, no odor



This wonderful invention, the VAPOR BURNER OUTFIT, is easily attached to any Cooking and Heating stoves, furnaces, etc. No wood or coal needed. Burns ordinary kerosene oil vaporized by air pressure. Will burn full force for 27 hours for less than 1½c per hour, without attention.

Big Proposition to Agents

Exclusive liberal territory given to live men. Nearly every demonstration means a sale. Big money to be made.

Write for full particulars and Booklet "F."

FUEL OIL BURNER CO.
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The easiest way to reduce fuel expenses—use a

SUPREME RANGE

We stand back of these ranges with an absolute guarantee that they give greater comfort, more satisfaction in cooking and baking, with half the quantity of coal that an ordinary range would consume.

If you consider economy and service this range should be your choice. It pays for itself in a short time in the fuel it saves.

There's a dealer in your town; he will be glad to show you. WRITE FOR BOOKLET "S" SHOWING OUR NEW AND HANDSOME DESIGNS.

Supreme Heating Co., Welland, Ont., Can.

SYNOPSIS OF CANADIAN NORTH-WEST LAND REGULATIONS

THE sole head of a family, or any male over 18 years old, may homestead a quarter-section of available Dominion Land in Manitoba, Saskatchewan or Alberta. The applicant must appear in person at the Dominion Lands Agency or Sub-Agency for the District. Entry by proxy may be made at the office of any Local Agent of Dominion Lands (not sub-agent), on certain conditions.

Duties—Six months' residence upon and cultivation of the land in each of three years. A homesteader may live within nine miles of his homestead on a farm of at least 80 acres, on certain conditions. A habitable house is required in every case, except when residence is performed in the vicinity.

In certain districts a homesteader in good standing may pre-empt a quarter-section alongside his homestead. Price $3.00 per acre.

Duties—Six months' residence in each of six years from date of homestead entry (including the time required to earn homestead patent) and 50 acres extra cultivation.

A homesteader who has exhausted his homestead right and cannot obtain a pre-emption may take a purchased homestead in certain districts. Price $3 per acre.

Duties—Must reside six months in each of three years, cultivate 50 acres and erect a house worth $300.

The area of cultivation is subject to reduction in case of rough, scrubby, or stony land.

W. W. CORY,
Deputy of the Minister of the Interior.

N.B.—Unauthorized publication of this advertisement will not be paid for. —58783.

formidable group of fine young fighters and brilliant speakers.

With Pugsley from the Maritime Provinces comes a phalanx of stalwart gladiators. How these maritime men love to fight! Woe betide the thoughtless opponent who crosses swords with "Ned" Macdonald, the sturdy Scot from Pictou. And his Irish fellow-Nova Scotian, George W. Kyte, of Richmond, can be relied upon to be "in it where it's thickest."

George W. Kyte is true to his Irish ancestry. He is full of ideas, of originality, of humor, of energy—and of fight. He has every strength but the strength of repose. He is never in repose. Parliament may be discussing some intricate local problem affecting the far-away Pacific coast, but the Nova Scotian is leaning over his desk, following the debate with all the personal intensity he would evince if his own constitutncy were the matter of immediate concern. And he is always ready—and eager—to jump into the melee. He has none of the orthodox arts of the politician. He doesn't win his way; he wrests it. Where his colleagues practice finesse, he goes in for boldness. He doesn't hanker after kid gloves. His friends swear by him; his enemies swear at him. Neither oaths of allegiance nor of antagonism affect him. But he is a great man to have—on your side!

In the dauntless and aggressive Frank B. Carvell, New Brunswick makes a notable contribution. With few gestures, squarely confronting the enemy, Carvell speaks. There is no appeal to passion, no loose generalities, no attempt at rhetoric, nothing subtle or bewildering. The sentences roll out with hammer-like precision. The points made are direct and unambiguous. The argument never wanders.

THE PENALTY CARVELL PAID.

Nobody likes to fight against Carvell. A good story goes its Ottawa rounds concerning him. The fighting New Brunswicker arrived late at one of the social functions at the capital. His name was announced to one of "the ladies of the Cabinet" who was assisting.

"Mr. Carvell?" the minister's wife exclaimed in clear tones which carried some distance. "You are surely not that bad man whom we all hate?"

The member bowed with Chesterfie ian deference. "Madam," he responded promptly in the same resonant baritone which has often hurled anathemas across the Commons chamber, "I pay a heavier penalty than I thought for doing my duty."

These are but a few of the outstanding young men who are taking their places in the front rank of the reinvigorated Opposition. They have many colleagues.

It is not strange, under such circumstances, that sackcloth and ashes is not the prevailing mode among Liberal parliamentarians. They are too busy for mourning. They may make mistakes, but they make them in service. They are eager for the fray, confident of their cause and intensely loyal to their leader.

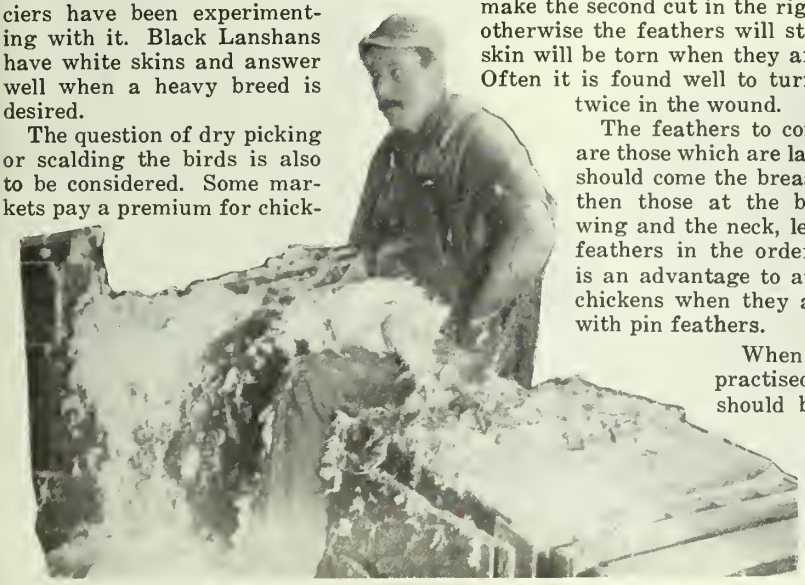
Selling Dressed Poultry

Care in Dressing to Meet Consumers' Whims Pays Well—Money From Feathers

By E. I. FARRINGTON

MANY farmers fail to get full value for their dressed poultry because they do not properly prepare the birds for market, or exercise sufficient care when they ship them. Much also depends upon the market itself. In most parts of Canada customers like chickens with white skins, but in New England the demand is for yellow skins. For that reason, it is advisable to keep the breed which will meet the requirements of one's special market. This applies most particularly to commission or general trade. If one has private customers it is not necessary, as a rule, to pay so much attention to this matter. The Orpington dresses well, has a white skin and is well adapted to Dominion markets. In the States, the most popular breed for market purposes is the White Plymouth Rock, which has yellow flesh and yellow legs and grows rapidly. The day of the Light Brahma has passed. The breed is too heavy and of late years has shown a decided lack of stamina. Probably the fanciers have been experimenting with it. Black Lanshans have white skins and answer well when a heavy breed is desired.

The question of dry picking or scalding the birds is also to be considered. Some markets pay a premium for chickens which are picked dry, while others are just as well satisfied with scalded poultry. The general tendency, however, is entirely in the direction of dry picking. To some farmers it seems a great task to pick a chicken without dipping it into hot water, but that is because they have not learned how dry-picking should be done. An expert can pick a chicken a minute but he first kills the bird by severing the juglar vein and piercing the brain, and goes to work immediately. Piercing the brain loosens the feathers and if taken at once they may be stripped off with the greatest ease.



The dry feathers are one of the profitable by-products.

The easiest way to kill the fowl is to suspend it by the legs by means of a cord with a noose in the end. Then the wings are locked by passing the right wing close to the shoulder over the left wing, and the left wing tip over the last joint of the right wing. Next the back of the bird's head is grasped with the left hand, the bill forced open with the middle finger of the right hand and the knife introduced into the mouth. A penknife with a blade two inches long is excellent if it has a sharp point and a keen cutting edge. The knife is thrust well into the throat, with the edge of the blade against the right side. It is pressed hard and drawn forward, inducing free bleeding. Then the knife is quickly driven into the brain through the roof of the mouth just back of the rear corner of the eye, bird gives a convulsive shudder and the feathers loosen. After a little practice this work is done quickly and easily. It is important that the first cut be made properly or the blood will not flow readily, but will settle under the skin and give a blotchy appearance. It is just as important to make the second cut in the right way, for otherwise the feathers will stick and the skin will be torn when they are removed. Often it is found well to turn the knife twice in the wound.

The feathers to come off first are those which are largest. Next should come the breast feathers, then those at the base of the wing and the neck, leg and back feathers in the order given. It is an advantage to avoid killing chickens when they are covered with pin feathers.

When scalding is practised, the water should be just below the boiling point. The bird should be held by the feet and soused until the water has penetrated to the skin, but the latter must not be scalded. The action of the steam should be depended upon to enter the pores and loosen the feathers. It is best not to dip the head unless it is to be removed before the carcass is sold, for the water gives it a sickly appearance. As soon as the feathers have been removed, the bird should be plunged in very hot water and then thrown into ice-cold water, where it may be left for several hours. It should not be shipped, though, until thoroughly dry.

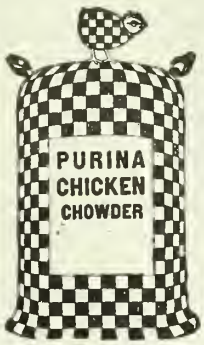
SOME PREFER DRY PICKING.

While scalding may be practised in many sections, there are several arguments in favor of dry picking. Dry-picked

DIRK'S RED MITE KILLER

One application KILLS all Mites and prevents their reappearance during the season. Keeps fowls free from body lice. Makes scaly legs bright and clean. Keeps lard, pastry and sweets free from ants. Bedbugs will give no trouble where used. Write to-day for special trial price. Booklet free.

Marshall & Marshall, Niagara Falls, Ont.
Distributors for Canada.



MAKING HENS LAY

is no problem for the poultryman who feeds

PURINA Chicken Chowder

Chicks thrive on it. Feed with Purina Scratch or Purina Chick Feed.

Write for pamphlet and give your dealer's name.

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BUYERS OF
Poultry, Game, Eggs and Feathers

Highest prices paid for good quality.
Ask for prices or make a trial shipment.

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BLUE ORPINGTON HEN
Bred by H. Corrie
2nd prize, CLUB SHOW, CRYSTAL PALACE, 1913, only time shown

If requiring some of

ENGLAND'S

best BLUE, BLACK, BUFF or WHITE ORPINGTONS or CAYUGA DUCKS, write stating full requirements

As I Breed Them at My Farm.

Special facilities for exportation. Also breeder of pedigree

JERSEY CATTLE and BERKSHIRE PIGS

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This is the Engine for You—Why?
The "AUTOPACT" ENGINE

Runs on gasoline, cheap paraffine or town gas. Will start on these fuels. The "AUTOPACT" ENGINE is a four-cycle engine, the parts are standard throughout and are easily replaced when worn.

Special Features

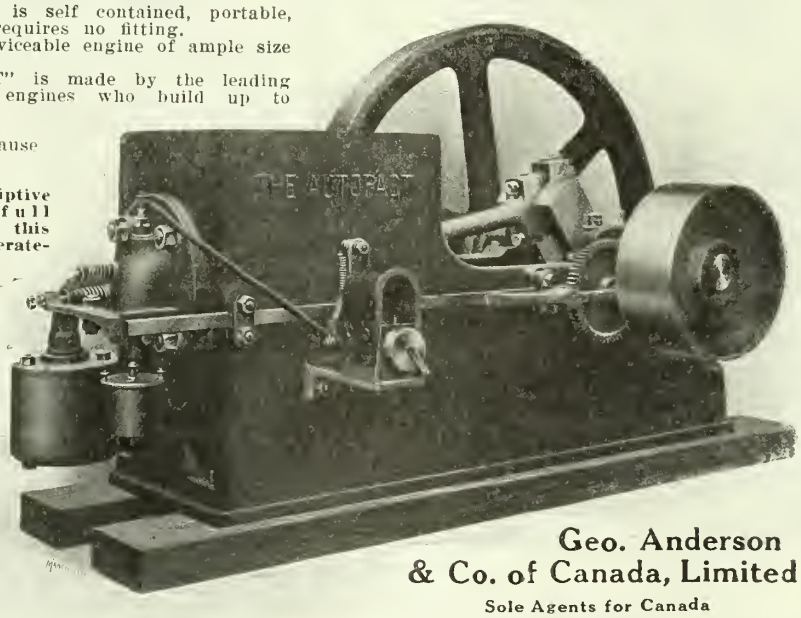
The AUTOPACT is self contained, portable, ready to work, requires no fitting.
It is a solid, serviceable engine of ample size and weight.
The "AUTOPACT" is made by the leading makers of gas engines who build up to 300 H.P.

Most reliable because most simple.

Write for descriptive circular giving full particulars about this practical and moderate-priced engine.

Low in Price

Owing to the enormous output and our labor-saving devices we are able to place the AUTOPACT on the market at a low price.



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Order a "Boss" from your dealer to-day. Test it 30 days. Your money refunded immediately if not satisfactory. **Guaranteed to work on good Oil, Gasoline or Gas Stoves.** Patented glass door, guaranteed not to break from heat. Genuine stamped "BOSS."

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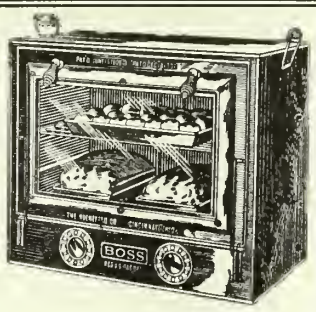


Sold by dealers throughout Canada

birds keep better and do not turn dark so quickly when exposed to the air. For a local trade, it often is possible to cut off the head with an axe in the good, old-fashioned way and to scald the chicken to get the feathers off. City trade, however, demands a better article. Poorly dressed fowls go to the cheaper class of buyers at a very low price. With the average farmer poultry is a side line, but it has possibilities which are often overlooked. And in any case, it pays to market the product of the poultry yard to the best advantage. One farmer of whom the writer knows has built up a profitable trade in spring chickens among people of means in a neighboring city. He is careful to have the birds fattened and dressed so as to satisfy the customers and is constantly getting orders, often by telephone. Now he is using the parcel post, and is doing a good business. This farmer also raises squabs and after some unsatisfactory experiences with commission merchants, he

Chickens properly dressed, cut in the back of the neck at left, wings locked at right.

went to the buyer of the best hotel in the city. "See here,' he said to that individual, "you are always looking for superior goods for your high-class trade and I am growing the finest squabs in this section; why don't we get together?"

GETTING AN HOTEL ORDER.

"Send around some samples," was the non-committal reply.

A box of first-class squabs was packed and delivered and the farmer has been selling to that hotel ever since. They were good squabs, though, and prepared for delivery in first-class shape. Otherwise, the hotel would never have placed an order.

A country woman who raises poultry has built up an excellent trade in chickens dressed, drawn and partly cut up, ready for cooking. There are many housekeepers who greatly dislike the dressing of a fowl, and who are willing to pay

liberally for birds which are practically ready for the fire when delivered. This woman packs the chickens in lined boxes and often places sprays of parsley or other greens over them. When the box is opened, the contents present a very attractive appearance, which is an item not to be overlooked.

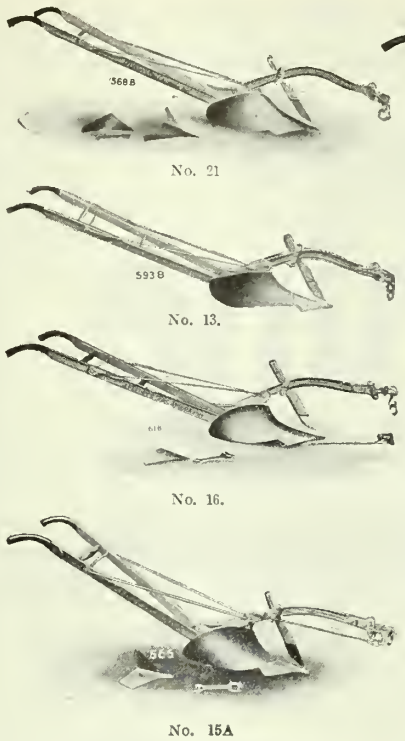
When poultry is to be shipped, it should not be drawn. Experience has shown that undrawn birds keep much the better. If dealing directly with the consumer, either practice may be followed, according to the arrangement made at the beginning. Unless so instructed, the seller will naturally deliver the bird unopened. In case the bird is to be drawn to meet the wish of a customer, it is well to do the work neatly. The incision for the removal of the bowels should be as small as possible. Heart and lungs should remain unless their removal is requested, and the gizzard and liver should be replaced. It pays to deliver each chicken wrapped in clean parchment paper.

It is important that the fowls be properly cooled, as soon as they are killed. This is especially important if the birds are to be shipped some distance and if the weather is warm. Ice may be necessary in summer. Before the birds are packed, the feet should be wiped and any clot of blood which may appear at the mouth be wiped away. Often there are heavy losses because poultry is not properly packed. Last Thanksgiving this loss ran high in the thousands, because the weather was unseasonably warm. In some cities, barrel after barrel of dressed poultry was condemned and destroyed. This loss fell almost entirely on the farmers. Professional poultry keepers were too wise to take chances. In summer it is necessary to use ice for long distance shipping. Barrels are commonly used and there is no trouble with them if they are properly packed. The birds are placed with their backs up and their heads to the outside of the barrel. It is an advantage to have the barrel lined with paper, but straw should not be used. There should first be a layer of ice for the birds to rest on and then alternate layers to the top. It is best to use rather fine ice, except for the top layer. A square of burlap should be stretched across the top and fastened securely.

CARELESS IN INVOICES.

It is a curious fact that many farmers ship their poultry without properly labeling the barrel or box. Probably the most common mistake is to omit their own name and address. Every year hundreds of packages reach the commission men bearing no hint of where they come from. A letter may have been written, but sometimes it is difficult to connect a letter and the package to which it refers. Frequently, too, the shipper fails to mail the invoice or else holds it several days.

Many times chickens come to the market with full crops, something which invariably counts against the shipper. Before a bird is killed it should always be kept without food long enough for the crop to become empty, even though it may not weigh quite so much in that condition. Commission dealers tell of find-



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No. 21.—The most FAMOUS PLOW in ONTARIO. Imitated by nearly all other Manufacturers of Plows. Imitations are generally inferior, in Plows as in other things!
Get the "ORIGINAL NO. 21."
No. 21.—Tinkler Wheel Plow—For the boy—or old man—or inexperienced farm hand. Will run from end to end without holding—and do PLOWING-MATCH work. A Tinkler Wheel Plow—original patented—should have a place on EVERY FARM.
No. 13.—High-class General Purpose, ESPECIALLY good in stubble. Extraordinarily light in draught.
"SPECIAL" No. 5, Narrow, General Purpose. FINE in sod—the neatest kind of a furrow.
No. 16.—Very light two-horse Plow—one-horse attachment if desired—ESPECIALLY adapted to Orchard work.
No. 15A.—One-horse Plow—unequalled. Imitated by other manufacturers—POORLY imitated! We give our WORD and GUARANTEE that no other One-Horse Plow equals this in EASE and COMFORT in handling or in WORK in garden, orchard or field.

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Medals and Diplomas, World's Fairs, Chicago and Paris
Sold by
THE JOHN DEERE PLOW CO. OF WELLAND, LTD.
77 Jarvis Street, TORONTO

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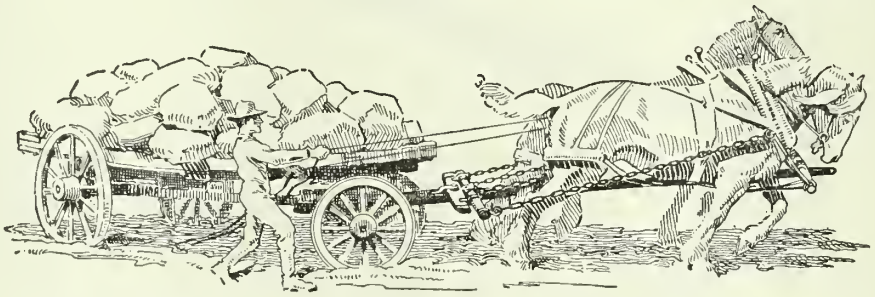

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Guaranteed by the Factory.
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More Wear.
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BUFFALO, N.Y. **McKinnon Chain Co.** ST. CATHARINES, ONT.

Make $2000.00 more per Year

Hundreds of farmers **right now** are making from $1000.00 to $2000.00 a year extra money, besides keeping up their farm work, making wells with the

Improved Powers Boring and Drilling Machine

Bores 100 ft. in 10 hours. One man can run it; a team operates it and easily moves it over any road; Bores slate, coal, soapstone—everything except hard rock, and it drills that. No tower or staking—rotates its own drill.
20 years actual service all over the world have proven this the fastest and most convenient well machine made. Easy terms. Write for catalog.
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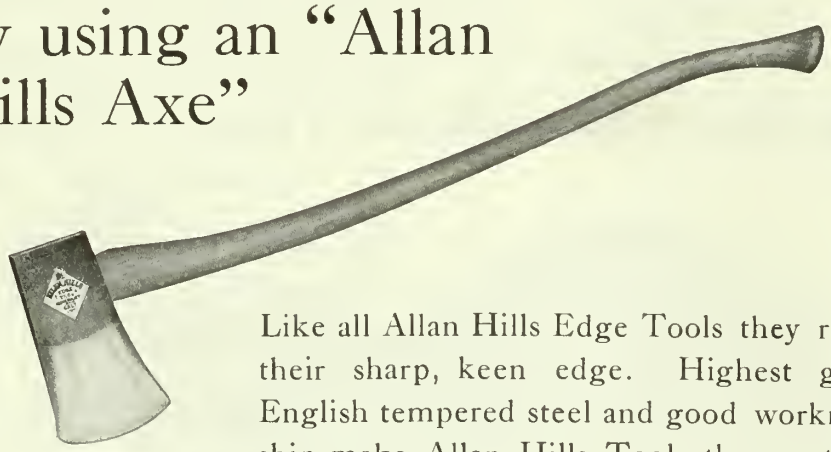

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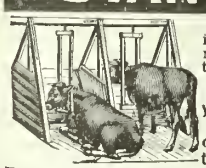

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ing stones and other heavy substances in the crops of birds from distant places. If the crop must be opened, the slit should always be made in the back of the neck and not in front, as is the common practice. When displayed in the stalls, chickens are hung with the breast to the front. If the cut in the neck is in the back, it does not show.

FASHIONS IN CHICKENS TOO.

There are distinct fashions in the dressing of poultry and it pays to know what they are, if one hopes to command the highest prices. Squab broilers are picked clean. Roasters and ordinary chickens have a few feathers left at the tips of the wings. Capons are dressed in a different way from all other kinds of poultry. The feathers at the top of the neck, those on the wings just over the first joint, the tail feathers, those on the back covering the hips and a fringe at the lower end of the drumstick should be left. Capons are profitable even when kept only six or eight months. There is a section of the Massachusetts South Shore which is famous the world over for its roasting chickens, thousands of which are marketed every year. On many of the plants the males are caponized, but are sold as roasters, because they bring even more than they would as capons. Under such circumstances, they are not dressed in the style followed for capons. There are several men in that section who caponize for other people at from five to ten cents a bird. One man has operated on probably 100,000 chickens.

DUCKS AND GEESE.

Ducks are much harder to pick than chickens and are more generally scalded, although dry picking is often practised. Both ducks and geese must be left in the water longer than chickens in order to have the water reach the skin. It is an excellent plan to wrap them in burlap for a few minutes as soon as they are taken from the water. Then the steam penetrates the feathers, which come off much easier as a result. It is said that some growers use resin with much success. After the feathers and part of the down have been removed, the bird is dipped into a pan partly filled with finely powdered resin. Then it goes into scalding water for a moment and the rest of the down rubbed off as soon as the carcass is sufficiently cool to be handled. Turkeys are very generally picked dry and that plan is to be recommended, as they look better than if scalded. It is an interesting fact that in many markets the dealers buy the farmers' guinea fowls with the feathers on.

FEATHERS A PAYING BY-PRODUCT.

It is well worth remembering that there is a good market for feathers. Of course, when one keeps only a small flock of poultry this is not an item to be considered, but professional poultrymen and especially duck-raisers and goose-growers pay considerable attention to the feather market. The fact that the feathers are kept in better shape is one reason for adopting the dry-picking method. On

large duck farms where the ducks are scalded, the feathers are afterwards carefully dried. White feathers are worth more than colored or mixed lots and those from geese command the highest prices.. They are often sold for as high as sixty cents a pound. Mixed goose feathers are worth forty cents, which is the amount received for white duck feathers. Hen feathers are worth from five to ten cents a pound.

In order to prepare them for market, the feathers must be spread out in an unused room and allowed to remain there several weeks, being occasionally turned. They should be shipped in cotton bags or in meal bags and it usual is not advisable to ship less than 100 pounds at once. In a neighborhood where farmers have large flocks, it will pay them to save their feathers and unite in selling them. The farmer, as well as the manufacturer, should make a profit from his by-products.

Spanish Gold

Continued from Page 32.

you all about the Chief Secretary. How's Michael Pat?"

Mary Kate grinned.

"If you're going to grin like that when I ask you questions," said Meldon, "you'd better go home."

He pushed her gently from the room and shut the door.

"Now, Higginbotham, put that kettle on your stove and bring it to the boil again. And you'd better take a note of your engagement with that child. It won't do for you to be out when she comes. Now for tea."

"Mr. Meldon," said the Chief Secretary, "I'd take it as a personal favor if you'd stay here and see me through the interview between Father Mulcrone and the old man who won't give up his land."

"Certainly. You're not expecting any sort of a fight, are you? If you are, I'd better go and borrow a stick somewhere."

"Oh, no. Nothing of that sort. It's only that the priest got rather the better of me yesterday. He made me promise what will cost the Government a thousand pounds and he'll probably want to get as much more out of me this afternoon."

"That'll be all right," said Meldon. "You leave it to me. Give me a free hand, that's all I ask. I'll manage him for you."

"Thank you," said the Chief Secretary; "he's a persistent man, but if anybody can get the better of him I'm sure you can."

"I suppose," said Meldon, "it was either a pier or seed potatoes he wanted the money for. Probably seed potatoes. The place must be rotten with piers already."

"He wanted both," said Mr. Willoughby. "It was the potatoes I promised."

"Well, I'll get out of that if I can. But don't count on it. I may not be able to manage."

Mr. Willoughby looked rather doubtfully at the loaf of bread with the smears of kettle-black which Mary Kate's fingers left on it. He was not reassured by the way in which Meldon cut it up. The plan was simple. Grasping the loaf firmly, he sliced off long strips. These he laid one by one flat along the palm of his left hand and held them in position by pressing his thumb into the corners. Then he drew a buttery knife across them. Higginbotham laid out his two cups and his slop bowl. They were quite clean. Meldon's hands were not. When tea was over Meldon suggested that they should smoke.

"I'm sorry," said Mr. Willoughby, "that I've no more cigars with me. The rest of my supply is on board the Granuaile."

"Higginbotham," said Meldon, "stick your head outside the door and see if the steamer is coming into the bay yet. You must try a fill of my baccy, Mr. Willoughby. I'm sure Higginbotham will have a spare pipe."

He pulled a lump of black twist tobacco out of his trousers pocket and handed it to the Chief Secretary. Then he rose and began to search for a pipe. Mr. Willoughby eyed the tobacco, turning it over and over in his hand. Higginbotham returned with the news that the Granuaile had just appeared round the south point of the bay.

"I fear," said Mr. Willoughby, "that this tobacco is too strong for me. I think that as the Granuaile is so near I'll wait until I can get some more of my own cigars."

"All right," said Meldon. "I'll have a pipe. I'll step down to the pier as soon as I have it lighted and be ready to meet Father Mulcrone. I'll send the boat back for the cigars. In the meanwhile, Higginbotham, you'd better go and collar Thomas O'Flaherty Pat."

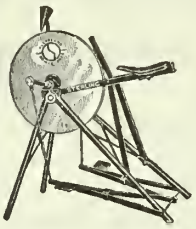
"He promised to come here," said Higginbotham, "as soon as ever the Granuaile dropped anchor."

"Don't you rely too much on his promises," said Meldon. "That old boy has taken you in once or twice already. You can't believe a word these people say," he explained to Mr. Willoughby. "Even Mary Kate would lie to you if she stood to gain anything by it. They simply don't know what truth is."

"Are they pragmatists?" asked Mr. Willoughby.

"No; they're not," said Meldon severely. "If you had listened to me when I was explaining to you what pragmatism is, you'd know that these people aren't pragmatists. I can't go into the whole question again now, but I'll just say this much: The pragmatists, according to

Don't Take Chances on a Poor Grindstone



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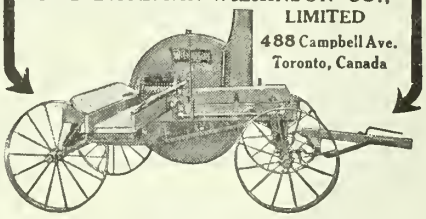

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their own idea, know what truth is. And what's more, they're the only people in the world who do. Now what I said about Thomas O'Flaherty Pat and Mary Kate is that they don't know; therefore they can't be pragmatists. That ought to be fairly obvious. I'm off now to meet Father Mulcrone. Goodbye."

"Mr. Higginbotham," said the Chief Secretary, "did you follow that reasoning about the pragmatists and Mary Kate?"

"Not—not quite. But I didn't take up ethics in College. Meldon did."

"Did you watch him cut the bread-and-butter for tea?"

"I did. I was sorry he insisted on cutting it. His hands were—— But he's a really good sort at bottom, though he has his peculiarities. I've known him for years."

"It must have been a great privilege. Did you see the bit of tobacco he offered me?"

"No; was there anything wrong with it?"

"He took it out of his trousers pocket," said Mr. Willoughby, "and it was quite warm. Mr. Meldon is certainly a very remarkable man. I wonder how he'll get on with Father Mulcrone. I wonder will he succeed in capturing all my cigars."

The Granuaile's boat, with Father Mulcrone seated in the stern, approached the pier. Meldon hailed her. The priest, a plump man, with a weather-beaten face and small, keen grey eyes, waved his hand in response.

"Delighted to see you," said Meldon, as the boat touched the pier and the priest stepped ashore. "I have heard a good deal about you. My name is Meldon—J. J. Meldon. I'm acting with the Chief Secretary here and he asked me to meet you."

"How do you do? How do you do?" said the priest.

"Quite well. I needn't ask how you are. Flowers in May are nothing to you in the matter of bloom of appearance."

Father Mulcrone seemed a little surprised at this warm compliment.

"What does the Chief Secretary want with me now?"

"We'll come to that in a minute. First of all I want to know is there nothing else that would do you except a pier?"

"A pier!"

"Well, seed potatoes, then. I forgot for the moment which it was."

"The season's very backward, very backward indeed," said the priest, "and the poor people will be badly off next spring. Unless we get some help from the Government there'll be starvation in our midst."

"Have you a Board of Guardians on the island?"

"We have not. And I wouldn't say but we're as well without one."

"I dare say you're right," said Meldon. "But about those seed potatoes. The thing for you to do is to get the nearest Board of Guardians to pass a good strong resolution."

"That might be done."

"Tell them to put something in about the representatives of the people and the

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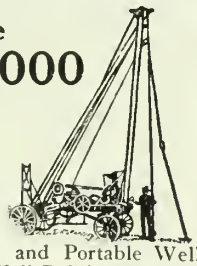

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"What for?"

"Oh, it's the usual thing. If these things aren't done properly the Chief Secretary can't act, simply can't. Then send a deputation to wait on the President of the Board. You understand me?"

"I do, of course."

"It'll be as well if you could spare the time to go up with the deputation yourself. Lay the matter before them in temperate language—strong but temperate. Then you'll see what'll happen about the seed potatoes."

Father Mulcrone winked at Meldon.

"Do you take me for a born fool," he said, "that you're talking that way to me?"

"As you've asked me the question straight, I may as well say that I don't take you for anything of the sort. I knew the kind of man you were the minute I set eyes on you. But I promised the Chief Secretary that I'd try and do you out of those seed potatoes if I could."

"So you thought you'd get him off if you persuaded me to have a lot of resolutions passed and go on a deputation."

"I did think that, and what's more I think it still. But you wouldn't fall in with the plan."

"I would not."

"Very well, then. We'll pass on, as they say, to the next business. There's an old fellow on this island called Thomas O'Flaherty Pat."

I know him well," said the priest.

"Well, you'll hardly believe it, but that old fellow is holding out against the entire Congested Districts Board. He won't give up his wretched little house and the bit of land round it, hardly big enough to sod a lark, and it with a hole in the middle that would swallow a heifer."

"I'll talk to him," said the priest.

"I thought you would. That's the reason I sent for you. Come along. We have him set out waiting for you. At least I told Higginbotham to go and get him."

Taking Father Mulcrone's arm he walked up towards the hut.

"I almost forgot to tell you," he said, "that the great difficulty about old O'Flaherty is that he can't talk English."

"He'll talk it quick enough when I get at him."

"I just thought he would."

"For the matter of that I'm not sure that I wouldn't as soon sort him in Irish."

"Just as you like, of course," said Meldon. "It's all the same to us, so long as you bring him to his senses."

"What right has a man like him to be thwarting the excellent intentions of the Board?"

"None," said Meldon; "and poor Higginbotham, who's brimful of the most excellent intentions you can possibly imagine, is nearly heart-broken about it. You'd be sorry for Higginbotham if you saw him; he's growing thin."

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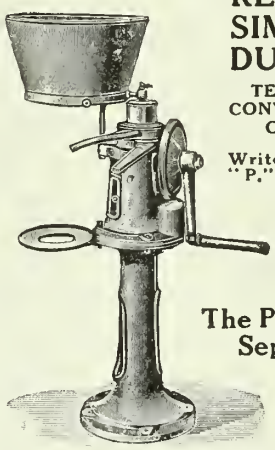

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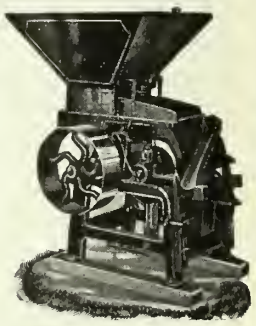

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"I have seen him," said the priest, "if he's the inspector the Board sent out. He was over at Inishmore this morning, just after the yacht left, looking out to see which of the people had consumption."

They reached the hut and found Mr. Willoughby seated in the hammock-chair. Higginbotham was absent in pursuit of the reluctant Thomas O'Flaherty Pat. Mr. Willoughby rose at once and offered the chair to the priest.

"No, thank you; no, thank you," said Father Mulcrone. "If I sat down in the like of that chair I'd never get out. I'm a heavy man."

"Father Mulcrone and I will sit on the bed," said Meldon. "Oh, it's all right, Mr. Willoughby. I'll move the oars and give the quilt a shake. I don't want to set Father Mulcrone down on a pile of broken glass. I've more respect for him than to do that."

He took the quilt outside the hut and flapped it vigorously up and down.

"I see Higginbotham and the old man coming down the hill together," he said. "There's quite a little crowd after them, but we needn't let anybody in unless we like. By the way, Mr. Willoughby, Father Mulcrone and I had a chat on the way up from the pier about those seed potatoes. He can't do without them. It's a case of potatoes or coffins for the people on those islands next spring."

"I feared so," said Mr. Willoughby with a sigh; "but I'm sure you did your best."

Higginbotham with Thomas O'Flaherty Pat, a dignified captive, entered the hut. The old man took off his hat and bowed courteously to the men in front of him. He held himself erect. His fine eyes wandered gravely round the hut. His face expressed neither curiosity nor obsequiousness. Mr. Willoughby was a gentleman, accustomed to the society of titled hostesses and the manners of exclusive London clubs. Higginbotham could behave gracefully at suburban tennis parties. Meldon and Father Mulcrone were strong and self-assertive men. Thomas O'Flaherty Pat looked and behaved in this company like a genuine aristocrat. He waited for what was to be said to him with an air of courteous aloofness. He appeared fully conscious of a certain superiority in himself, a superiority so self-evident as to require neither assertion nor emphasis.

"You are Mr. Thomas O'Flaherty, I think?" said Mr. Willoughby.

"Ni beurla agam," said the old man, bowing again.

Then Father Mulcrone began. He spoke in Irish, rapidly and at some length. Thomas O'Flaherty Pat replied in a few calm words. The priest spoke again, raising his voice indignantly. Again he received only the briefest of answers. A torrent of words followed from the priest. Father Mulcrone had made no idle boast when he said that he could deal with the old man in Irish. He never paused for an instant, never hesitated for a word. Thomas O'Flaherty was moved to quite a long reply. The priest interrupted him frequently, but the old man showed no sign of excitement and spoke all the time with gentle courtesy. When he stopped Father Mulcrone rose from the bed and spoke with unabated volubility. He gesticulated violently, waving his arms and bringing the palms of his hands together with loud smacks. For half an hour the dispute continued, heated argument on the one side, dignified reply on the other. At last Thomas O'Flaherty Pat shrugged his shoulders with a gesture of despair.

"I have him persuaded at last," said Father Mulcrone, wiping his brow with the back of his hand, "but I had a tough job of it. A more obstinate man I never met in all my born days."

"I thought you'd get him in the end," said Meldon. "I couldn't understand a word you were saying, of course, but the way you said it made me feel that the poor old fellow hadn't half a chance."

"If you have the papers ready to-morrow morning," said Father Mulcrone to Higginbotham, "I'll see that he signs them."

"We're all greatly obliged to you," said Meldon. "Without your help I really don't know what we should have done."

"As Mr. Meldon says," added the Chief Secretary, "we're greatly obliged to you. And now, gentlemen, I hope you'll come and dine with me on the Granuaile. I can offer you a small cabin for the night, Father Mulcrone. It's too late to go back to Inishmore."

"Thanks," said Meldon. "We'll go, of course. What do you say, Father Mulcrone? I'm only sorry the Major won't be with us."

"The Major!" said Mr. Willoughby. "Oh, yes; Major Kent, of course, the geological expert. Go and fetch him, Mr. Meldon. I shall be delighted to see him."

"He wouldn't come if I did," said Meldon. "Apart altogether from the survey business he wouldn't come. Nothing would induce him to dine out without a dress-coat, and he hasn't one on the yacht. That's the kind of man he is. In any case I don't want to go back to the yacht to ask him. There's a breeze getting up now and if the Major got me on board he'd want to up anchor and run home."

Meldon took possession of the Chief Secretary and led the way to the pier. He looked up at the sky and sniffed the air suspiciously.

"There's a change coming," he said. "It will be blowing hard before morning."

"Which of the two yachts is yours?" asked Mr. Willoughby.

"Do you mean which of the two actually belongs to me, or do you mean which do I happen to be cruising in at present?"

"That," said Mr. Willoughby, "sounds like another riddle. Does it by any chance illustrate the pragmatist philosophy?"

"It might, if properly worked out. But I'm too hungry to attempt that now. About those yachts—the one to the south is Major Kent's Spindrift. I'm with him for this cruise. The other is my Aureole. I've hired her to Sir Giles Buckley. I see him and his friend Euseby Langton coming ashore now in their punt. By Jove! That reminds me. Higginbotham!"

He stood still suddenly. The Chief Secretary also halted. His face expressed patient expectation and a determination not to be surprised. Higginbotham and Father Mulcrone overtook them.

"Higginbotham," said Meldon, "did you lock the door of your hut?"

"No, I didn't. I locked it this morning when I went——"

"And you found your bed full of oars and broken glass," said Mr. Willoughby. "I think you're right to leave the door open this time."

"When I tell you," said Meldon, "that Sir Giles is coming ashore in his punt and that he went down the hole in Thomas O'Flaherty's field this morning, perhaps you will go back and lock your door."

"I will, if you like, but I don't know what you mean."

"If you don't understand what I'm telling you," said Meldon, "you needn't bother about the door; but in that case Thomas O'Flaherty Pat ought certainly to be warned."

"I thought when I first heard of you," said Mr. Willoughby, "that you were an impudent liar. Next I decided that you were a lunatic. Then I made sure you were a man of unusual force of character and mental agility. Now I'm getting puzzled about you again."

"Don't bother about me," said Meldon. "I'm sorry for Thomas O'Flaherty Pat, that's all. It makes me a bit nervous to see Sir Giles coming ashore in the dusk of the evening."

"Who is Sir Giles?" asked Mr. Willoughby.

"He's rather a hot lot. In fact, he's a bit of a lad. He'd—" Meldon paused and looked meaningly at the priest, then he whistled—"as soon as drink a pint of porter. You know what I mean, Father Mulcrone."

"I do," said the priest; "I do well."

"I don't," said Mr. Willoughby. "I wish you'd explain. Do you know, Mr. Higginbotham?"

"I do a little," said Higginbotham. "That's to say, I more or less guess."

"I suppose," said Mr. Willoughby plaintively, "that it's better for me not to know. I am a mere child compared to you two reverend gentlemen. I ought to be grateful to you for respecting my innocence and for not speaking more plainly than you do."

A boat from the Granuaile lay alongside the pier. The party embarked just as Sir Giles Buckley's punt reached the shore.

"Good-evening, Sir Giles," said Meldon. "Surely you're not going down that hole again to-night."

Sir Giles scowled in reply.

"That gentleman doesn't seem to be on very good terms with you," said Mr. Willoughby.

"He's not just at present," said Meldon. "I had a conversation with him this afternoon. He chose to assume that I wasn't speaking the truth, and he hasn't got over it since."

"I have a certain sympathy with him," said Mr. Willoughby. "I dare say he knows little or nothing about pragmatism. I went very near getting angry myself when I thought—just for the moment—that you had been deceiving Mr. Higginbotham."

"You got over it all right," said Meldon. "Nobody minds a man flaring out now and then as you did. You don't keep on sulking like that beast Sir Giles. You are a more or less reasonable man."

CHAPTER XVIII.

ON board the Granuaile Mr. Willoughby showed himself a courteous host. He took Father Mulcrone to a cabin and offered to provide him with anything he wanted. But the priest, having foreseen that he would sleep elsewhere than in his own bed, had with him a small bag which contained all that he required. Higginbotham and Meldon were put into another cabin. The party assembled in the saloon and dinner was served.

"You do yourself pretty well on this boat," said Meldon as he tasted the soup. "The Major and I have been living principally on sardines and tinned brawn. Higginbotham gets a lobster now and then. I suppose you have more lobsters than you care about in the course of the summer, Father Mulcrone?"

"I get plenty," said the priest. "Lobsters, potatoes, and tea. They're the easiest things to get on Inishmore."

After this the conversation languished. Mr. Willoughby was disappointed. He expected an amusing dinner. He found himself obliged to talk on dull subjects to Higginbotham, who was too much overawed by the company of a Chief Secretary to do more than make respectful replies. Meldon said a word in praise of each dish he tasted, and Father Mulcrone supplemented what he said in the manner of a man who seconds a vote of thanks. Otherwise, neither of the two clergymen talked. They were both hungry. They were both accustomed to take their meals alone. They both regarded the eating of a good dinner as a serious business, demanding undivided attention. Mr. Willoughby, tired of Higginbotham, undertook a monologue and kept it going quietly until dinner was over and cigars were lit.

Then Father Mulcrone told a story. Meldon capped it with another. Father Mulcrone replied with a better one. Meldon outwent it. The stories became more and more extravagant. Mr. Willoughby looked from one clergyman to the other and laughed heartily. Higginbotham giggled convulsively in a corner. Neither of the clergymen even smiled. With perfectly grave faces, in tones which would have suited a scientific lecture, they narrated absurdity after absurdity. It was Meldon who reached the climax, who told a story so monstrously improbable that Father Mulcrone gave up the attempt to better it.

"For a young man," said the priest, "and I wouldn't say you were more than seven-and-twenty——"

"I'll be that in three weeks, if I live so long," said Meldon.

"You've a deal of experience of this country and the ways of the people."

"For the matter of that you've seen a thing or two yourself."

"I have; but when I was your age I didn't know the half of what you do."

It was a handsome tribute. Meldon appreciated it. He raised his glass of whisky and water, nodded to Father Mulcrone and said—

"May the devil fly away with the roof of the house where you and I aren't welcome."

"I consider myself fortunate," said Mr. Willoughby, "in having as my guests tonight two men with the knowledge of Ireland which you possess. I'm learning more from your conversation than from all the Blue Books I ever read."

"I think we may understand from that remark," said Father Mulcrone, "that there's no danger of the slates being taken off the Lodge in the Phœnix while you're in it."

"You'll be welcome there, either of you," said Mr. Willoughby, "while I hold office. You'll be all the more welcome if you come together."

"We'll do it," said Meldon.

"What are the authorities of your Churches thinking of," said Mr. Willoughby, "when they leave you a curate, Mr. Meldon, and you no more than a parish priest, Father Mulcrone?"

"I'd be well off if I was that itself. It's a C.C. I am, and so far as I know it's a C.C. I'm likely to remain."

"You ought," said Mr. Willoughby, "to be bishops at least, both of you. If I had the arranging of these things you'd be archbishops. Why aren't you?"

"I haven't reached the canonical age," said Meldon. "You can't be a bishop till you're thirty. I've three years more to wait."

"I went very near being a bishop once," said Father Mulcrone, "and it's my sincere hope I'll never be as near it again. It wasn't in this diocese, but another, and I won't tell you where for fear of an action for libel. The old man that was the bishop died. The night after they buried him I happened to be going along the road in the dark. It might have been ten o'clock or half-past. Who did I see coming along towards me but the dead man, dressed up in his robes, and his episcopal ring on his thumb. When he caught sight of me he took off the ring and held it out to me as much as to say, 'It's yourself, Father Mulcrone, that's to succeed me.' I was pleased, I can tell you. I stuck out my thumb for him to put the ring on, seeing that was what he seemed to be wanting to do. Would you believe it, gentlemen? The ring was red hot!"

"And is that," said Meldon, "the place bishops go to when they're dead?"

"It's the only place I ever heard of," said Father Mulcrone, "where a ring could get into such a state as that."

"On the whole, then, I think I'll stick to my curacy. It's safer."

"You're right. It's what I've done myself."

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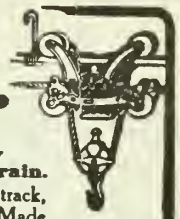

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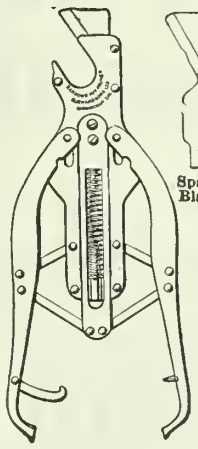

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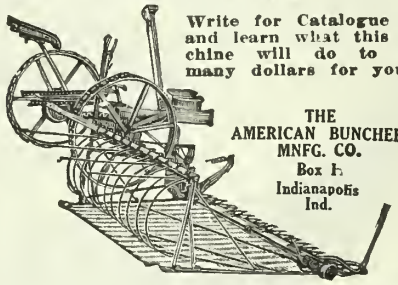

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There was a silence for a minute or two, broken only by half-suppressed sniggers from Higginbotham. Then Meldon rose with a sigh.

"You have me beat, Father Mulcrone. I give in to you. The equal of the experience you've just narrated never came my way. I think I'll be saying good-night, Mr. Willoughby. If you'll send a boat to the pier with me and Higginbotham, I'll get my punt there and go off to the Spindrift."

The Granuaile's boat landed Meldon and Higginbotham at about eleven o'clock. A change in the weather was certainly coming. Great masses of clouds were piled up over the western half of the sky. Broken fragments, the advance guard of their army, rushed eastwards. The little wind there had been earlier in the afternoon was gone. The air was ominously still. From the far side of the island came the roar of waves. The sea was dashing sullenly against the rocks and dragging at the stones on the beaches. Not yet lashed by the storm, it already felt a premonition of the storm's coming. Even the water in the sheltered bay was affected with a vague uneasiness. Dark lumps rose here and there on its surface and sank again. Silent surges crept unexpectedly up the smooth sides of the pier, mouthing at the stones, slipping down again unsatisfied, eddying in hungry circles.

Meldon looked round him uncomfortably.

"I'll take the punt on board to-night," he said, "and I'll pay out a few extra fathom of anchor chain. There'll be a blow before morning. If I were you, Higginbotham, I'd stuff an old towel or something into that broken window. It's going to rain and rain heavy. Good-night."

"Good-night. What a pleasant man Mr. Willoughby is! I am so glad there was no trouble between you and him. Good-night."

Meldon struck a match and lit his pipe. Then he stooped down to loose the painter of the punt. As he did so he heard footsteps on the granite surface of the pier, the footsteps of some one who approached him. He supposed that Higginbotham had returned again to say some forgotten word. With the rope he had cast loose in his hand he stood and waited. It was not Higginbotham who approached. Whoever it was stopped about ten yards away from him. Meldon could dimly discern the figure of a man much taller than Higginbotham. A voice, raised very little above a whisper, reached him—

"Master."

Meldon stooped and refastened the painter. He heard the voice again but did not recognize it.

"Master."

He approached the tall figure, peering eagerly through the darkness.

"I'm blesed," he said, "if it isn't old Thomas O'Flaherty Pat! So you've got one word of English, have you? Maybe now if you searched in the corner of your mind you might find a little more."

"I have plenty," said the old man. "There's few have more English nor better English than myself."

"I always thought you had," said Meldon. "I'd have laid long odds on it if I'd been a betting man, which, of course, I'm not. Now what is it you want?"

"It's yourself, Master."

"Is it, then? And what would you do with me supposing you had me? Tell me that. Is it wanting me to speak a word for you to the Chief Secretary you are, to get back your house and land?"

"It is not."

"If it is, I'll do it, of course; but I tell you straight that it won't be the smallest bit of use. The whole might of the British Empire is against you. They'll get your land out of you if they have to send a man-of-war round to do it. Besides, you know, you gave yourself away badly in that interview with Father Mulcrone to-day. I don't blame you. I knew very well you were done for when they fetched the priest to you. It was a mean trick, that. No real sportsman would have done it. It was a sort of sitting shot. You didn't have the ghost of a chance. Now if you'd been treated fairly and left to worry it out with nobody but Mary Kate to come between you and the Board, you might have kept them arguing till either they or you were dead."

"It isn't wanting you to speak for me I am. Neither to himself, nor his reverence, nor to any other man."

"Is it a writing, then?"

"It is not."

"Well, I'm glad to hear that any way, for I haven't brought my fountain pen with me on this cruise, and I'm thinking it's poorly I'd write with any pen and ink that you are likely to have. But if it isn't to speak nor yet to write I don't quite see what it is you do want."

"It's yourself."

"That's all very fine. I owe you a good turn for giving me that crab, and I admire the plucky way in which you've stood up to Higginbotham and the Board, but I'm not going to hand myself over body and soul to a man I've only known for three days without finding out what he wants me for. Has anything gone wrong with Mary Kate or Michael Pat?"

"I'd be thankful to you if you'd step up to my little houseen, the place that they're going to take from me."

"What for?" said Meldon. "I declare to goodness it's very near as hard to make out what you want now you're talking English as it was before."

"There's that there that I'd be glad to show you. Maybe you'd tell me what would be the best to be done. It's what I never expected to show to any man, let alone a stranger like yourself. But my mind's made up, and I'll show it to you."

Meldon gripped the old man by the arm.

"Is it the treasure you have hid there?"

"Treasure?"

"Treasure; yes. Gold. Do you understand? Is it gold you have up in your house?"

"It might, then."

"Is there much of it? How much is there?"

To be continued.

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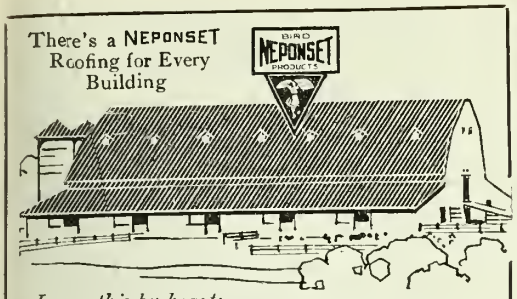

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Continued from page 6.

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The Country Store and the Farm

Continued from page 9.

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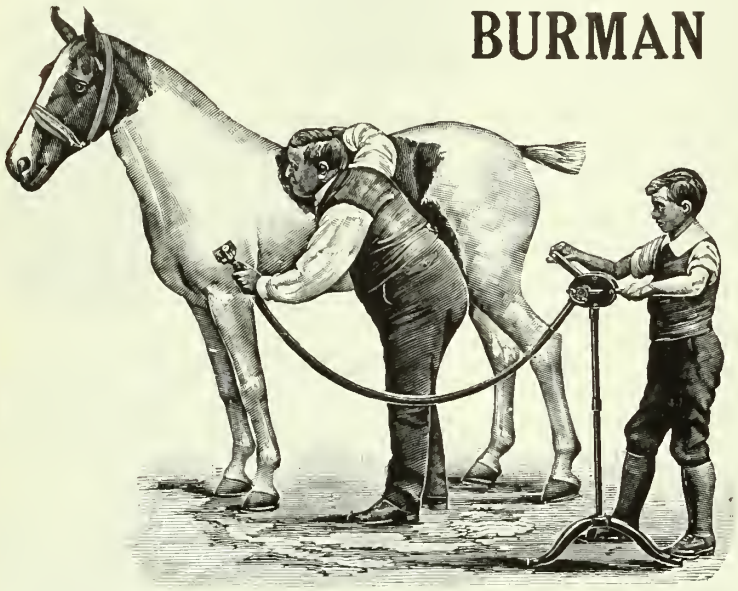

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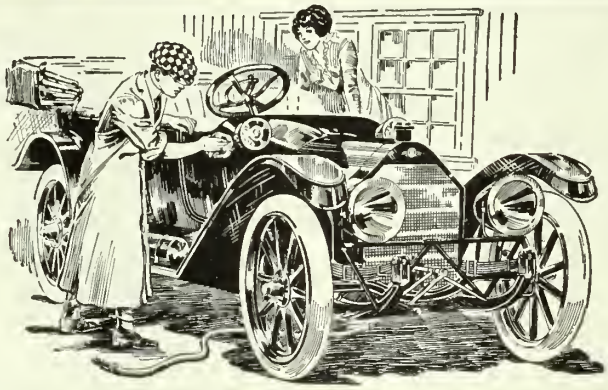

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come fewer in number and must serve wider territories. Those lines that have ceased to be in demand must be curtailed or dropped, and those which may be developed must be heavily stocked. Skillful business methods must be applied to show customers in what lines mail order house prices can be beaten, and fair play must be practised always. A cash basis must be established and the storekeeper must study his customers as well as his business. He must anticipate their wants and supply them. And he must study the tendency of the times, the economic laws that govern trading.

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Pat Burns, Cattle King

Continued from page 15.

gary, Edmonton and Vancouver comprice one of the biggest organizations of the kind in the world.

As his business expanded and his deals grew to larger and larger proportions, the necessity for acquiring grazing lands to accommodate his cattle made itself felt and Mr. Burns was long-headed enough to perceive that the sooner he bought and fenced in his land the better. Settlement was playing havoc with the old ranchmen and crowding them out of existence and in proportion as the homesteads were taken up, so would values of unoccupied land soar. Accordingly, from time to time during the nineties the cattle dealer bought great tracts, purchasing a choice spot here, another there, and so on, until he now owns hundreds of thousands of acres in the province of Alberta. The famous Home Ranch, twelve miles south of Calgary, is his, as is also the Mackie Ranch of 150,000 acres on the Milk River. He is the owner of the Quirk Ranch at Okotoks and the Imperial Ranch on the Red Deer River. Besides this he has made handsome profits out of the land he acquired in Calgary in the early days.

What manner of man then is this who has succeeded in making himself one of the richest citizens of Western Canada? A natural assumption would be that he was the sort of person one usually associates with power and wealth—the typical money magnate. No matter what his antecedents or earlier mode of life, it would be quite to be expected that he would be clothed about with special privilege, would live in grand style and would assume an air of superiority to those about him. That this idea of Patrick Burns is all wrong, is surely a tribute to the genuineness of the man. To all intents

and purposes he is the same person who used to assist the settlers of thirty years ago to cart their belongings into the Minnedosa district. The coming of prosperity has not appreciably turned his head or made him other than the genial, open-hearted fellow he was in those days.

While the Burns residence in Calgary is a pretty palatial mansion, it does not follow that its owner lives up to the style of his house. As a matter of fact his mode of existence is remarkably simple. Strange to say, despite the rough and ready associations of many years and the contact with pretty tough specimens of mankind, he neither smokes, drinks nor plays for money. He is as clean-living as the most straight-laced Puritan and prides himself on his resistance to the temptations that always beset a man in his position.

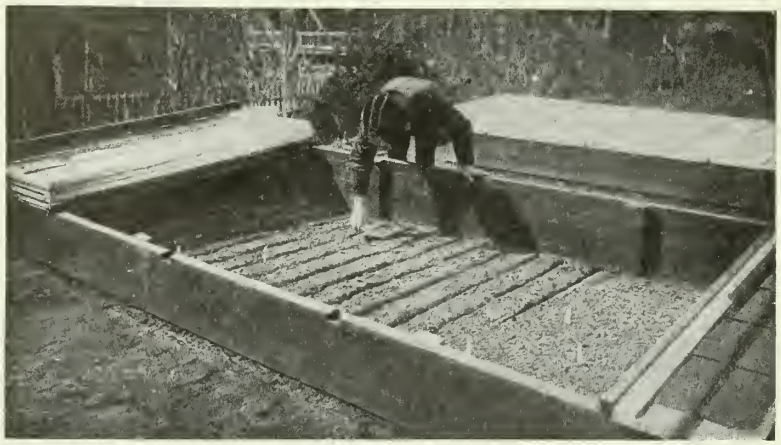
At the head office of his company, which adjoins the big Calgary abattoir, this unassuming millionaire moves about from department to department with a freedom and an absence of officialism that is refreshing. There is nothing of the swell about his dress nor a shade of punctiliousness about his manner. He receives and converses with a reporter from one of the city papers in just as courteous a way as he would were his visitor one of the most important men in the country. And his geniality is not assumed for the purpose, but is quite as genuine as his smile or his laugh.

He is evidently not a man gifted with any fondness for detail. The filling in he leaves to others. His forte has been quick-fire action and in moving about and dealing with men he has found greater opportunities than in attending to the minutiae of the office and counting room. Having a thorough knowledge of cattle, acquired in early life, he has devoted himself to the practical end of the business, superintending the buying, examining the animals and systematizing their handling. Doubtless in the restlessness of his nature lies one reason for his success. He has never wearied himself by too constant application to one thing, but has varied his outlook constantly.

When all is said and done, however, Pat Burns' interests are all centered in the one thing—the management of the widespread organization which he has established. He would be the last one to lay claim to any other distinction. He admits his lack of education and makes no bones about his complete ignorance of literature and art. He says he has never read a book since his school-days and hasn't any desire as yet to fill the void. If he takes pride in anything it is that his name is above reproach and stands for a big achievement in the world of business.

APPRECIATES EDUCATION.

At the same time he does not scoff at the advantages to be derived from education, but fully appreciates its value. There is a story that when he was in Toronto a few years ago, he was inveigled into attending a dinner, which the students from Western Canada enrolled at the University, had got up. President Falconer was there and Mr. Burns was naturally an honored guest. Though he rarely, if ever,



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speaks in public, the cattle king was called on to make a few remarks during the evening. He began abruptly by saying, "You boys don't know what you've got here," and went on to dilate in his own way on the advantages they enjoyed. It was a telling little speech and, coming from the source it did, was doubly effective.

A short time ago he was taken by the Hon. Duncan Marshall, Alberta's Minister of Agriculture, along with some other prominent men, to inspect the new agricultural high school at Olds. After he had seen the boys and girls at work and the scholars were assembled in the big hall on the top floor, he was asked among others to speak. He did not say much but he showed his appreciation of what the school aimed to accomplish by offering a very generous scholarship for the best student. The offer came as a great surprise, but showed that he had his eyes open to the utility of the institution.

Such a man is naturally generous in his dealings. Mr. Burns is what might be regarded as an "easy mark," whenever money for any public cause has to be raised in Calgary and so far as his personal benefactions are concerned, they are very extensive. He is not easily imposed on, however, and dispenses his charity with a careful hand. Dealing squarely with others, he believes in receiving the same treatment himself.

He is not interested in politics or at least not to the extent of taking any active part in them. He gives a mild sort of support to the provincial Government, and it is said might have had a senatorship during the Liberal regime at Ottawa, had he desired it. But he has been content to stick to the one business in the management of which very few men are in a position to give him any pointers.

Gifted with a strong physique, which he has not abused by indulgence of any sort; working hard and constantly from early to late, but without excessive application to any one task; sleeping like a top all night; never dissipating his energies in a lot of different directions, he has had much in his favor from the physical standpoint. Couple with this a good deal of shrewd common sense; an ability to deal with men and to deal in animals; a habit of running no bills, always paying spot cash, and never defrauding the men from whom he bought or the people to whom he sold, and one has a few of the characteristics and practices that have made him the man he is.

THE FIRST AERIAL POST.

A plan for installing an aerial postal service between Bagdad and Aleppo, in Asia Minor, is reported to have been sanctioned by the Turkish Government, and if the plan goes into effect this will be the first regular aerial post ever established. The distance between these cities is 560 miles, and as the route lies across desert country it is expected that there will be some serious dangers in operating the service.

August Duties on the Farm in Canada

By GRASMERE

Farmers outside of a few scattered areas, have little to fear from the harvest returns as they come from the machine. Big stories of wheat crops in the United States now estimated at 930 millions will have a lowering effect on wheat prices in our Western provinces which were none too well pleased last year with the returns. The United States will be able to export about a million bushels of wheat a day. They have also a big corn crop in sight.

Live stock conditions are bright. Despite the big prospects of feed, the scarcity of young cattle will not allow of low prices for beef. Sheepmen will likely find a big market for anything in the breeding line. The shortage in the States is already swinging prices upward. It is now with sheep where cattle were two years ago.

The August landscape in the older East as well as in the newer prairie countryside, declares particularly the value of shade trees and paint in adding value to a farm, and the particularly undesirable types of many farm houses. What accords better on the prairie with the fitness of things than a charming bungalow?

And how inexcusable many of our Ontario farm houses loom up in a setting of barb wire and June grass! So August is a month for resolves and spiritual stock-taking. The inspiration of a lovely rural Canada, where homes that are real homes protect a rising galaxy of young people, ought to grow upon us as framers of the best agricultural prospect of-of-doors.

IN THE ORCHARD AND FRUIT GARDEN.

All cultivation around apple and other fruit trees should be stopped this month. What is needed now is for the present growth to ripen.

Thinning apples has been a profitable practice in many orchards. The moral courage required to pluck off good fruit is a necessary virtue in the successful orchardist.

When the raspberries fruit, get rid of the old cane. Next year's fruit will come from the newer canes of this year's growth. Be sure to burn up the prunings, and to keep the beds free from superfluous growth.

Bag the ripening grapes. The sweetening fruit makes luscious food for marauding birds, from which the bags protect the graps—also the bags partly regulate the temperature, which results in the even ripening of the whole bunch.

If you are not going to plant the same crop next year in the old strawberry bed, plow it under. If it is to be used next year, it should be cleaned up at once.

Remember that the pears ripen better in a dark room than on the trees. Pick them several days before they should soften, as they are almost sure to rot if left on the trees.

Brace the trees bearing heavy crops in order to keep the limbs from breaking off or from sagging upon each other. It will save the fruit.

This is the month for grafting "bud-

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sticks." Arrange for a few desirable "bud-sticks" from the owner of a choice tree, and bud them now on your own stocks.

Be very careful in picking fruit to keep from pulling off the stems. Decay is sure to follow such a mistake. Lay those without stems together with the imperfect fruits. Keep the orchard cleaned up as much as any other part of the land.

IN THE VEGETABLE GARDEN.

The tops should be cut off from the asparagus plants the latter part of the month, as the ripening seed will fall and germinate in places where they do not belong, unless this is done. In removing the tops, cut off as close to the ground as possible. The old stubs if left sticking up, are likely to scratch your hands when harvesting the next year's crops. Destroy the seeds by burning the tops.

Onions must be harvested this month. Give them a chance to cure outside on the ground, then store them away in open crates in some cool place.

Do not let the garden land bake dry and hard. Cultivate often enough to keep up a good dust mulch. The results in the growth of your plants will more than repay you for any effort spent in this way.

A sowing of early variety beets in the first part of August will provide an ample supply of young, tender beets for fall eating, at a time when they are a delicacy.

Harvest the early crop of cabbage this month, and provide for future fertilization by planting seeds of rye, vetch, or other legumes. These can be turned under in the spring, to make a green fertilizer.

Keep up the weekly sowing of beans, raddishes and lettuce in provision for the fall demand for fresh vegetables. Early sweet corn for fall harvest should be planted also.

Late varieties of celery can still be planted. The early kinds such as White Plume ought to be blanched. To do this, bank with soil or with boards.

Get after the cabbage worm with arsenate of lead spray. This should also contain some sticky resin-like substance.

Continue to spray the squashes and melons systematically with Bordeaux mixture in order to prevent mildew and blight.

For a change from the regular garden spinach, sow New Zealand spinach. This will prove a welcome hot-weather substitute for the usual kind.

Potatoes whose tops have become infested with blight will not keep well through the winter. Spray constantly with Bordeaux mixture containing arsenate of lead, to eradicate the bugs.

IN THE FLOWER GARDEN.

Divide the old crowded peonies this month, and they will bloom in the spring. Be sure the growth and buds have ripened, and then transplant, as this is the best month of the year for that purpose.

For pansies and English daisies for spring bloom, it is still possible to sow in the cold-frames. They will flower early in the spring if grown in this way through the winter.

Provide for November blooms indoors by potting Roman hyacinth bulbs now. The flowers will bloom through the holiday season.

Plant Madonna lily bulbs now, to have them started before cold weather begins.

During the month of August, a large part of the garden shrubs can be made to root from cuttings. Sandy soil should be used for this purpose. Plant in flats until cold weather, then store in a cool place.

SUPPLEMENTING THE PASTURE FEED.

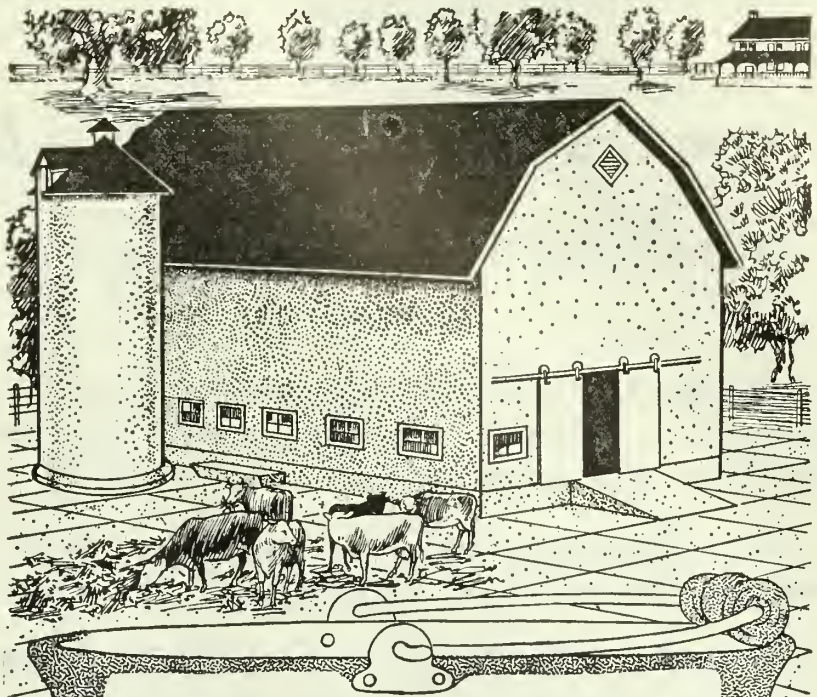
We are likely to have a few weeks of weather this summer in which the pastures will become short enough to effect the milk flow of the cows. When such a time comes it is the farmer who is prepared to feed his cows that maintains the milk flow. It pays handsomely to be able to tide the cows over any period of pasture shortage that may occur in the summer; for when a cow once falls off in milk flow it is next to impossible to bring her back until after she refreshens.

Feeding poor cows, and poor feeding of good cows lies at the bottom of poor, unprofitable results in thousands of cases. The columns of FARMER'S MAGAZINE abound in statements of successful men who have foreseen and avoided these two big rocks. A cow must use about one-half of her daily ration for the support of her body. If she is a large producer the draft on her body is greater and that body with its milk-making machinery demands its full share and generally gets it. If the cow is not fed any more than her body support demands, then the food goes in that direction and but little goes to milk production. There is no way of making a profit from cows except by keeping good cows and feeding generously of the right kind of feed.

FLIES IN THE DAIRY.

At this season farmers are inquiring whether there is any preparation that may be used to keep flies off the cows and eliminate the trouble they cause both cows and milker. There are several manufactured repellants on the market, which are both harmless and effective, and have the advantage over home-made preparations in being ready mixed. A good formula for home-mixing is the following: Coal tar dip (any kind), one pint; one-fourth bar of soap; one pint of either linseed oil, fish oil or kerosene; fifteen pints of hot water. These should be mixed thoroughly to form an emulsion. The emulsion may be applied with a brush or as a spray; the latter is the preferable method.

During August the house-fly makes its worst inroads. In the dairy room it is not only a nuisance but a menace as well. One dairyman has found the following an easy and effective way to rid his work-room of flies. He has screened doors and windows, and he has made a fly-escape on these through which a fly can escape, but cannot return. The escape consists of a cone made of the metal fly-screen. This is soldered at the edges to hold its form and at the apex a small hole is left, large enough for a fly to pass through. This cone is attached to the screened window at the larger end and the screen on the window cut away on the inside. The flies go to the light and crawl through this cone



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to the small hole at the end. Through this they pass out, and once out they cannot return. This rids the room of flies every night, and only those get into the room the next day that enter through the door when someone enters or passes.

ON THE LAND.

In the preparation of the ground for fall seeding the feet of the young horses are liable to suffer. Left to itself the foot of the colt does not always grow according to the most approved fashion. There is need for the careful horseman to keep close watch on the colts' hoofs. In stony or gravelly soil the horn usually wears off at the rate sufficient to maintain the proper proportions; but in black loamy soils the hoofs are little worn and growing fast they may become unshapely. This may even result in a malformation in extreme cases.

The usual remedy in case of such unshapely hoofs on the youngsters is to sharpen the toes with a rasp. The walls of the foot may be rounded a bit. A rasp and a knife in the hands of an enthusiastic novice, however, are likely to be wielded so as to do more harm than good. The good horseman is always a careful horseman. A toe too long is likely to make a pastern too steep. When the colt's feet need attention it should be given, else the eventual sale price is liable to be cut down considerably. One should also remember that hoof-horn, like all other parts of the colt's anatomy, must be made out of the feed which goes in at the youngster's mouth.

This is the time of the year when horses are troubled with sore shoulders and other harness rubs. Bathing with salt and water, the application of healing powders, or sometimes the readjustment of parts of the harness will relieve the trouble.

Plowing must begin this month if the best results of farming in the older provinces are to be obtained. A good plowing in August is worth far more than a similar one two months later. As moisture goes off very readily and soil bacteria do not work in dry soils, the land should be well harrowed immediately after the day's plowing.

AUGUST POULTRY HINTS.

Give the poultry some animal food or meat, as the molting season comes on. Such food is essential as feather-forming material. Watch the young stock especially, and occasionally give a feed of linseed meal, as well as a few handfuls of sunflower seeds throughout this period.

Keep up the water-supply. See that the water is clean and fresh, and that it is easy of access.

The hens which molt early are the best, as by November they should be in the best again.

Fight the lice and other insects continually, using kerosene and sulphur. Make up your mind to exterminate these pests in order to have healthy productive poultry.

Begin to select the young stock for next year's breeding. Put them into separate runs and give them extra care. Healthy, strong hens produce healthy, virile chicks. Pick out the bright active poultry for this

purpose, and avoid those which have been sickly and drooping.

Feed plenty of wheat and crushed oats, and cut down on the corn this month. The latter is too heating. Be sure that there is green food enough for the whole flock.

See that the yards are kept fresh, and the earth is soft enough to be scratched. Hard-packed, filthy runs cannot produce healthy hens.

Don't forget shade. The poultry must have some cool spot in which to get away from the heat of the day.

Get after the rats with sulphur, and do it now. Don't let new families grow up on your poultry profits. Drop burning sulphur in the holes and block the entrances.

The Metchnikoff diet of sour milk has found a new application as a treatment for white diarrhoea in young chicks and turkeys. The milk is allowed to sour naturally and is kept before the chicks constantly. Whether as a result of the bacteria it contains or for other reasons, the chicks that have access to it suffer less from the disease and make better growth than those that do not have it.

Keep the young turkeys out of green grain. If allowed the run of a field of unripe grain they will gorge themselves and die. Be sure they are well supplied with sharp grit and fine oyster shell.

Beans Add $400 to Farm Yields

Continued from page 16.

warm, sunshiny day when the bean plants are at their toughest. The scuffling must be of a surface character and never done close to the plants. Plants have been used by deep and close use of the cultivator, as this practice means the destruction of the plants' roots and the consequent cutting off of the source of supply of nourishment. It must be remembered that the bean is a rank feeder and will not tolerate without serious loss the destruction of any considerable number of its roots. It must always be remembered that the best time to destroy weeds is before the beans are planted. All cultivation after the planting must be of such a character as to conserve the plant-root system.

The beans are ready for harvesting early in September. The bean-harvester clips the stalks a little below the surface of the ground and gathers two rows into one. The beans may be raked up with a horserake. The side-delivery rake does good work in this connection. It is best to harvest this crop in very much the condition of peas. The yield depends upon the season as is the case with everything else that mother earth yields her cultivators. In a fair season the yield runs fifteen, twenty, or even thirty or more bushels per acre. The threshing is done at a certain rate per bushel, say for five or six cents per bushel. A good crop on a twelve-acre field may be threshed quite easily in half a day, so in most other cases of a similar kind the cost of raising the beans must be calculated on the basis of

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the condition of the soil as regards fertility and physical condition and cleanness and the success with the sowing and harvesting. There is no royal road for bean-growing, and no arrangement can be made to secure invariably, as in producing other crops, good seasons. All these and other items must be thought of in reckoning the cost of harvesting.

$1.70 AN AVERAGE PRICE.

Immediately after harvest the crop is ready for the market. The producer takes his product to the dealer who carefully tests the product for the quality and appearance of the bean and who bases the price according to schedule and the condition of the product. The price at the elevator depends upon the state of the market, but $1.70 per bushel is an average price. $2 per bushel is not regarded as out of the way.

The bean straw is a valuable addition to the farmer's fodder supply. Horses, cows and fattening cattle eat it as greedily as they eat clover, while sheep are especially fond of it. When the soil is good the straw is abundant. Clover, corn and bean straw help to put the farmer on easy street as regards his fodder supply.

The effect of bean-growing on the soil is the very best. Being sown late in the spring this crop admits of a splendid cultivation in the way of weed-killing. The machine harvesting is as good as an extra use of the cultivator. Harvested early in September they are out of the field in time for the fall wheat harvest. The wonderful root system means the addition to the soil of large quantities of humus. Further, this crop is a legume and a tremendous nitrogen gatherer and fixer. The humus added to the soil by this crop and the nitrogen it gathers from the air cannot but leave the field that produces it richer and in every way more serviceable to the farmer.

GOES WITH FALL WHEAT.

In one of the regions where beans are grown extensively it is a noteworthy fact that farmers are almost certain of twenty-five bushels to the acre of fall wheat and that thirty-five bushels per acre is no rare thing. In addition to this there is in that district scarcely a failure of the clover seeding. The other crops, such as the barley and oats and corn, are of the very finest variety and quality. The farmers in this locality feel it to be a part of the season's work to sow at least twelve or fourteen acres of beans. They figure on this crop as one of their ready money-makers. Scores of farmers remember their beans as their mortgage-lifter. Live where you will through this bean region and you will find every farmer with a field of from twelve to twenty acres of this crop. No part of the cultivation of this legume is heavy work. Machinery yields the bean-grower its assistance at every turn. It is sown by the farm seed-drill. It is cultivated by the two-horse corn or other root cultivator. It is harvested by the bean-harvester; it may be raked by the side-delivery rake and may be loaded by the hay-loader. It is not an expensive crop as it costs but little more to raise and harvest than it costs to harvest, say peas or oats. The

product has a ready market and always may be sold for cash. So far, there has been no evidence of over-production.

Further, this crop lends itself admirably to mixed farming. In fact the farmers who have done best in bean-growing are the most enthusiastic in recommending that beans be grown in rotation. Beans may well be grown wherever peas will do well in farm economy. There are those who have gone in exclusively for bean-farming who have found that they were up against the law of diminishing returns. It is the farmer who practises a good system of general farming who will, in the end do best with beans. There are many farms in older Canada that stand in need of having this plant crop in their system.

A dry season reveals the fact that the supply of humus and nitrogen is not over abundant. Anyone can see the result that will one day overtake an agricultural community that allows its farms to become lacking in these two constituents. Many parts of older Canada have the soil and climatic conditions essential to the growth of this crop. Some of the localities that have hitherto been looked upon as the home of the bean are suffering from the folly of not rotating this crop with other crops and for this reason they cannot give the market the supply it demands. Is not this older Canada's opportunity?

On the other hand the farmers who have been content to grow this crop along with other crops still figure that beans will continue to prove their money-maker. Their fine buildings, their crops with the color that indicates the presence of well-nourished soil, together with the evidences of prosperity, tell the story of good judgment in their agricultural operations. Why should not more Canadian farmers try the production of this crop?

THE FINE ART OF HOEING.

We can hire plenty of men to ride cultivators in the fields; we can find men who can run hand plows and cultivators in the garden—with indifferent results. But we have never been able to hire a man to hoe as we want hoeing done.

To begin with, there are hoes and hoes. We get the standard, broad-bladed, light-shanked hoe, and have the blacksmith trim off the lower third in such a manner as to leave it a flattened heart shape. Then we grind it to a sharp edge, with a long slope, on the under side.

When held at the right angle to enter the soil easily, raised fairly high and given a smart impetus, such as the expert axman gives his implement, this hoe will do more and give better work than any other we have tried.

In more careful work the man with the hoe backs away, leaving no compacting footprints on the loose, freshly hoed soil. Such hoeing, as soon after each rain or irrigation as the soil becomes friable, destroys the sprouting weeding seeds, keeps moisture available for plant use, and by giving air access to the darkness and moisture of the under soil, aids in the bacterial action which breaks down the soil combinations and makes their mineral contents available for plant use.

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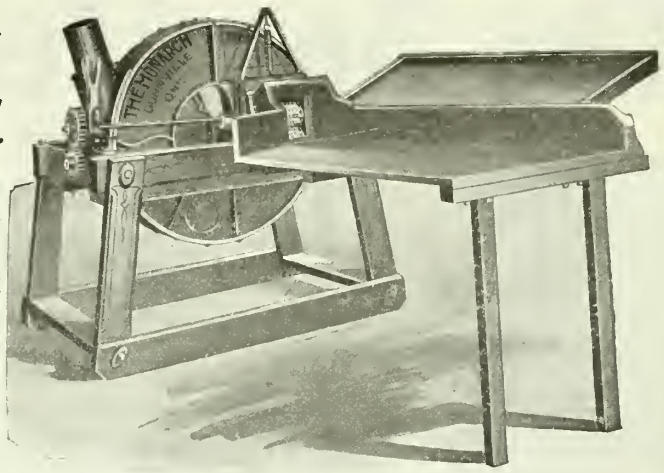

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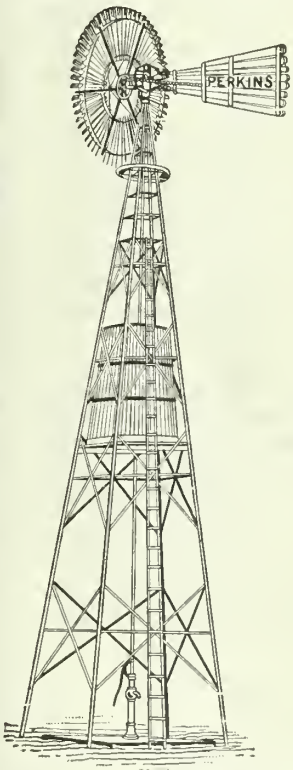

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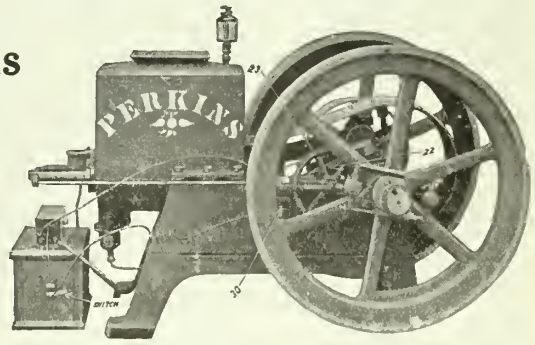

for pumping purposes cannot be excelled. We build them in 54 different sizes and styles, both wood and steel wheels, and have been building them for nearly 60 years. We build the steel wheel, and build them good as they can be built, but when the question is asked, "Which is best mill to buy?" our answer is the wood wheel on a steel tower, which makes the very best job that money can buy.

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Replies to Queries from Country Correspondents

By THE EDITOR

SPITTLE INSECTS.

W. H. Y., Ont.—What is it causes the white specks or foam clusters at the joints of young timothy and grass stems, although it was not as bad this year there is still much harm done to the pastures.

Answer.—This phenomenon on the grass stems is caused by what is known as the spittle insect or frog-hopper. If the mass of white foam be carefully brushed away a small wingless green or blackish insect will be found lying close to the stem and with its beak inserted in the stem of grass. In this position it sucks out the juices of the plant, and must interfere seriously, at times, with the growth of the grass or plant attacked.

There have been many theories advanced to explain the production of the frothy material. Some writers have said that the plant produced it, others that the cuckoo bird put it on the grass, others that the insect in the mass expelled the foam from its beak, while others believed the foam was expelled from the anal opening of the insect. Investigations at Cornell University made in 1908 show that a fluid is excreted by the insect from the anal opening, and that bubbles of air are then mixed with it by certain appendages on the abdomen. Added to this is a mucilaginous material secreted by certain glands of the body. This material stiffens the more watery fluid and just as gelatine is put in ice cream to give it body and stiffness.

There seems to be no way of destroying these insects without cutting the grass.

BINDWEED OR MORNING GLORY.

W. H. W., Ont.—Can you give any advice regarding the destruction of bindweed? I have one or two spots in my field that seem to defy all my efforts.

Answer.—This pest seems to cause the most trouble in cultivated fields, especially in fields devoted to such low growing crops as potatoes, strawberries, or garden truck. Corn generally outgrows the morning-glories, but by drying up the soil the pest causes a probable reduction in yield of several bushels on each acre of corn land which it infests. To kill out morning-glories in a cultivated field is very hard. The ordinary shovel cultivator will not do at all. A surface cultivator or a shovel cultivator equipped with nine-inch sweeps must be used. Hand hoeing must be given if the pest is to be given any severe setback, and the hoeing must be done once a week. It is an old-fashioned idea that an especially effective time to hoe morning-glories is immediately after a rain. Many folks think also that in late July and early August, the morning-glory is

weaker than at any other season of the year.

It is a good plan to sow morning-glory land so far as possible to rank, quick-growing crops. Sorghum, millet and rape are each good, when seeded thickly.

In fighting any weed like the morning-glory, it is important to remember that the leaves are the lungs of the plant, and that the way to kill the plant is to take away the lungs. This may be done by smothering or by cutting off at the surface of the ground. The important thing is to keep much leaf growth from showing above the surface of the ground for a period of several months. Some men have used hogs and sheep in these infested fields to great advantage.

Testing 2,000 Cattle

A Ranchman's Wholesale Hunt for Tuberculosis

By JOHN W. WRIGHT
in the Country Gentleman

DOWN in the land of sunshine, tremendous horizons, clear air and magnificent sunsets, where large herds of beef cattle roam the ranges, is situated the herd of Falfurrias Jerseys, consisting of about 2,250 head, 650 of them registered Jerseys and 1,600 grade Jerseys. This dairy herd is an enterprise of Edward C. Lasater, who about three years ago set aside 40,000 acres of the Falfurrias Ranch of 365,000 acres for the establishment of dairy stations and the pastures necessary for their operation. The creamery, where butter is made, the office and general headquarters, are situated in the town of Falfurrias, in Starr County, Texas, about one hundred and eighty-five miles south by southeast of San Antonio.

Mr. Lasater is a dairyman whose principles are decidedly progressive. He always has in view the idea of substantial improvement. One of his commendable theories is that a dairy herd is not reputable until it is freed of all suspicion of tuberculosis. It is a pity that a larger percentage of the farmers and dairymen in the country will not agree with this and do their share to stamp out the disease.

In January and February, 1912, Mr. Lasater's entire herd—that is, all the cattle more than six months of age—was tuberculin tested. Since that time the entire herd has been retested.

The method used in both cases was the regulation subcutaneous test. A complete single test requires two days. On the first day a series of three to five temperatures is taken to determine, as nearly as possible, the normal temperatures of the animals. Occasionally a case is found of abnormally high temperature, due to proximity of calving or some temporary physical disturbance. Sometimes we find young animals passing through light attacks of Texas fever, and these must be excluded, as normal temperatures cannot be dependably ascertained.

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On the left is a healthy ear of wheat full and sound—the kind that makes money for you—on the right is an ear, drawn from a photograph, absolutely eaten up with that fungus spore called "smut"—there is no money in that. : Some farmers, through no fault of their own, have had all the profit knocked out of their crops by "smut". Something must be done to stop it because it spreads.

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is a preparation used with great success in Europe. It has decided advantages over bluestone and chemicals because it is non-poisonous and will not endanger the germination of the seed. In fact, not only is it protection against disease, grubs and birds, but a great assistance to germination, producing a healthy stand. These are facts, established beyond a doubt by tests throughout all grain growing countries and we have striking letters from practical farmers testifying to the efficiency of this seed dressing.

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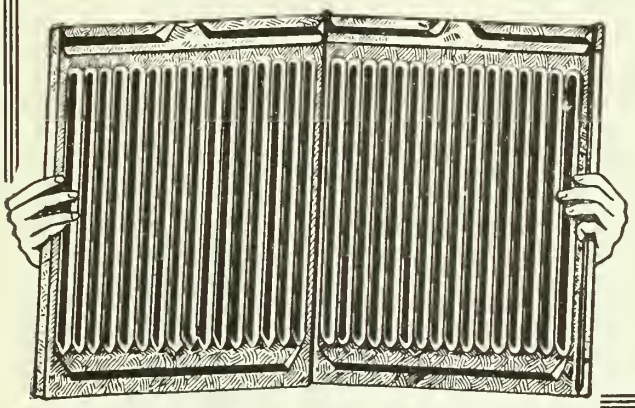

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THREE REACTORS IN A THOUSAND.

At eight or nine o'clock in the evening of this first day each animal was given, under the loose skin of the neck, an injection of tuberculin, varying in amount according to the age, weight and sex of the animal. In both of our tests the United States Government tuberculin was used. Calves, from six months to yearlings, were given about one cubic centimeter. Yearlings to two-year-olds were given from one to one and a half cubic centimeters, according to growth. The average run of dairy cows received about two cubic centimeters, but older or exceptionally heavy cows were given from two and a half to three or four cubic centimeters. Grown bulls were given at least four cubic centimeters.

On the second day of the test five or more temperatures were taken, one every two hours, beginning at 6 a.m. The presence of tubercular lesions of the slightest character will occasion a variation over the predetermined normal temperatures. These variations usually takes the form of a rising and falling curve. The ideal reaction will usually show a rise in temperature of at least two and a half or three degrees. Besides the thermal indications, physical effects can often be noted. The eyes may become dull and unnatural, and in some cases the general depression is quite noticeable.

In January and February, 1912, Dr. E. R. Forbes, State Veterinarian of Texas, tested the herd, which had at that time about 1,850 animals more than six months old. Of this number, 30 reacted, and post-mortem examinations disclosed tubercular lesions, some slight and some well defined, in each animal. It is remarkable that no more than 30 reactions were encountered in this test, considering that only three years before, when the herd was founded, the cattle were gathered from herds that were mostly untested.

In the test recently completed only six head reacted out of 1,961 that underwent the test. This seems to indicate that fresh air and sunshine are of more necessity than luxury. Not one of these animals ever sees the inside of a closed barn. They are in the open all the time, and have as little excuse as possible to contract tuberculosis. Next year, when the herd is tested again, it will undoubtedly be found entirely clean—and it will be kept so for all time.

This recent test was conducted by Dr. J. C. Burneson, a United States Government Inspector from the Buerau of Animal Industry. Doctor Burneson has conducted official tests in all parts of the country for a number of years, but it is interesting to note that he never tested such a herd as the Falfurrias Jerseys. In fact, I believe it is the largest test ever conducted. We consumed in actual work about six weeks, although interruptions drew the time out a bit longer.

It was a camping trip, with the regulation outfit. Tests were made at the eight dairies that were then in operation—there are now nine—and at six windmills, some of which are at central watering places at the junction of several pastures. In the dairies the animals were tied in their regular places in the milking pens. At the windmills we tied in the corrals or, lacking corrals, to fence posts. The individual camps lasted mostly two days, though some were four days.

The test work itself was reduced to system. When temperatures were to be taken we used from fifteen to thirty heavy veterinary thermometers. While Doctor Burneson extracted thermometers and read temperatures, which I recorded on blanks provided by the Government for that purpose, we always had at least three men going on ahead down the line, putting them in new animals. In this way each thermometer had more than sufficient time to register, and the work was done more quickly. When the injections were made at night, one cow-hand kept the animals' heads in a good position, another had "tail holds," and another held a lantern so Doctor Burneson could see the necks and make sure the injections were well made. Two of us followed along with bottles of tuberculin and kept syringes filled so there would be no waiting to "load up."

A HERD CLEAN-UP IS GOOD ADVERTISING.

This clean-up of such a herd should be an object lesson to dairymen all over the country. Of the 30 animals which reacted in the spring of 1912, ten showed very bad lesions. Of the six which reacted in the recent test, none showed any advanced stages of tuberculosis. In three cases the lesions were almost microscopic, and Doctor Burneson's skill as an anatomist was necessary to locate the infection.

If a herd of this size can be made clean it would seem that the man with a small herd could very easily clean up and do his little share to prevent the spread of tuberculosis among both humans and cattle. Take a small herd—of twenty-five to fifty cows. In the majority of localities the cows would be in closed barns. The presence of tuberculosis in just one of the animals would mean that sooner or later the disease would spread to some of the others. Tuberculosis germs just love a nice dark barn, and the less sunlight there is to disturb their existence, the more joyfully and dangerously they thrive.

If one cow in a small herd is found to have tuberculosis, and she is removed and the barn thoroughly cleaned and disinfected, the rest of the animals will be safe, so long as no new infection is introduced from an outside herd. Many men are afraid of the tuberculin test, and think that cows without any signs ofthe disease will be condemned. The subcutaneous test is accurate in 97 cases out of 100, and there is more danger that diseased animals will be missed than that the test will catch those that have no tuberculosis. I

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F.M.

am speaking, of course, of the test conducted by a man who knows what he is doing.

In this recent test of the Falfurrias Jerseys there were about thirty cases of youngsters that some men without experience in the work might have condemned without taking into consideration the weather conditions and such things. Get a good reliable man to test your herd. Take out the cows that react. Milk from a herd that is known to be free from tuberculosis is always more salable than that from a doubtful herd. In the creamery at Falfurrias several hundred pounds of good butter are made every day the year round, and the demand exceeds the supply. Every day inquiries are received for prices on bulls, heifers and cows. The herd is clean, and people know it. Go ahead and clean up your herd; then tell everybody about it, and see how much better you feel and how much more readily you can dispose of anything you may have for sale.

That is the business side of it. The human side is almost stereotyped—the little babies in the city being fed from tubercular cows, such conditions tending to thwart all efforts to stamp out the White Plague. A man may be a rabid humanitarian and a poor business man, or vice versa. Cleaning up a dairy herd, whether large of small, shows both qualities.

Some of these days tuberculin testing is going to be absolutely compulsory, and all condemned cows will have to be removed. When that time comes you will wish that in 1913 you had had your herd tested, and that the one cow that had the disease then had been discovered and killed so you could avoid killing half a dozen that had caught the infection from her. So, Mr. Dairyman, you'd better ask your local health officer how to get the testing done, and then clean up.

FARMING FOR PEARLS.

The recent decision of the U. S. Bureau of Fisheries to start breeding pearl mussels by artificial means in the valley of the Cumberland River, opens up to the public a new and very profitable industry. Investigation conducted over a long period by the scientific staff of the bureau has demonstrated that fresh-water pearls are produced by many varieties of mussels through the action of certain small parasitic worms, which bore through the shell and set up an irritation on the flesh of the mussel. In self-defence the mussell secretes an excess of pearl-forming material and encysts the parasite, a pearl resulting. Thousands of these fresh-water pearls have been carefully cut open by Government investigators, and within each one was found, when examined under a powerful miscroscope, the nucleus containing one of these little worms.

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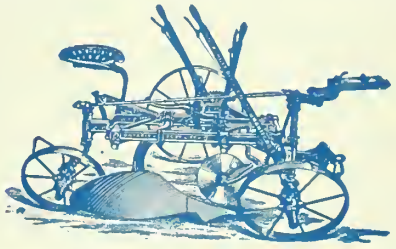

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SEPTEMBER

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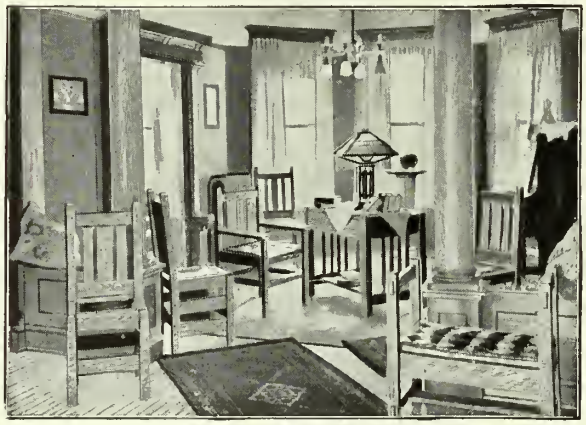

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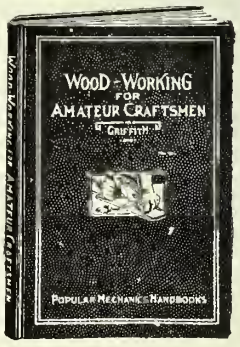

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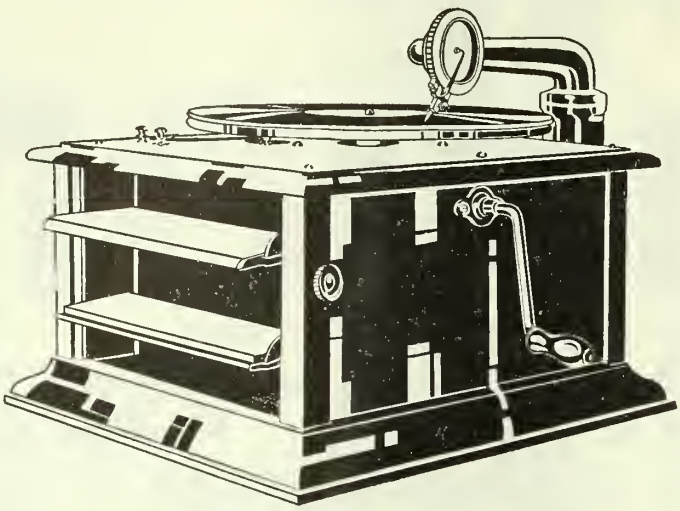

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FARMER'S MAGAZINE

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SEPTEMBER, 1914

F. M. CHAPMAN, B.A., Man. Editor
ETHEL M. CHAPMAN, Assoc. Editor
J. I. CODDINGTON, Ph.B., Cir. Manager

A Few Glances Into the Features of the Coming Month

War talk is everywhere. The shock of the declaration of this appalling clash of arms struck every Canadian dumb with amazement. The new experiences suddenly interjected, like a bombshell, into our business conditions have made an almost complete reforming of the industrial and social ranks.

But one thing stands out clear and vividly before all. It is the wonderful resourcefulness, the clever wheeling into the newly-formed lines, of all our Canadian enterprises and political organizations. That is the hallmark of Anglo-Saxon greatness. Resourcefulness is a virtue indeed.

All this is largely due to the spirit engendered by our environment. Above all we are an agricultural country. We have, as farmers, to meet sudden emergencies of weather, flood and famine. We live under conditions of violent changes. Our crops may fail at one point and we immediately bring up another reserve line. A hail storm by one stroke wipes out our fortunes to-day. To-morrow we are building new hopes and pushing forward in new campaigns.

A thunderstorm consumes our barns, and before the timbers cease smoking, the plans for an improved structure are on the way.

That is why the nation whose lot is cast in a land like Canada or Great Britain, or Australia, can turn a corner so easily.

Farmer's Magazine, in its past efforts to dignify agriculture and agricultural pursuits, feels a greater glow of enthusiasm than ever in thus contributing to the literature of our people in these troublous times. In this issue, we have introduced some features of war-farming. Other writers contribute from each Province, real helpful articles on subjects of vital importance. The illustrations are well maintained.

We have a vigorous faith in the farm at this time, the farmer again revealed as the foundation of the nation. We are striking a high note in every issue and we trust that every reader will be prouder and prouder of his good work in helping us enter the best homes of the land. This help can be best done by calling the attention of a neighbor to the excellencies of the Magazine and in inducing him to place before his family, the best literature that ever went into a Canadian Farmer's Journal.

October will be a good one. Here are a few contributors whose articles, all well illustrated, will be read with delight:

Justus Miller, W. L. Smith, W. D. Albright, J. Malcolm Macdonald, F. W. Crandall, Jean Mackenzie, F. C. MacKenzie, W. A. Craick, Tom E. Dobbin, James Anthony, Genevieve, Grasmere, Thos. McGillicuddy.

Besides this there will be several contributions by staff-writers on Western Farming, Women's Work and Agriculture in War Times.

Be sure to get this issue. Have it come to your fireside regularly by dropping a postcard now.

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FOR SALE BY ALL DEALERS

Agriculture In War Time

What Happened In Agriculture in Napoleon's Time, and When the Crimea and the American Civil War Disturbances Sold Wheat at $2.25 a Bushel

By FRANK M. CHAPMAN

Upon the commisariat depends the sueeess of the army in the field. The farmer is the starting point for these supplies. Upon his effieieney to produce above his needs rests the whole fabric of society—admittedly more apparent in war-times than in peace.

So long have we enjoyed the blessings of peace, that it is a new situation in which Canadian farmers find themselves. Largely produecrs of wheat and other eereals, livestoek, dairy and poultry products, and fruits, these farmers logically, will find their returns inereased. Just how or when, this will work out is governed largely by world eireumstances, for never before was it more elearly brought home to a people, the elose inter-relationship of nations in a common brotherhood. Good prices demand the best that is in agriculture. Production must go on with the best plans we ean muster. We must be on the job.

Agrieultural thrift as the backbone of a nation in arms has a good illustration in France. One year ago the eity of Paris offered for sale $41,000,000 of bonds for the extension of the municipal gas plant. The amount was subseribed eighty times, and by whom? The thrifty peasants and artisans of France. This is proof that the frugal Freneh had stored away over three billions of dollars.

Agricultural prosperity with the stamina that the soil gives to us makes us securer than the gold reservcs of the eapital. The examples of former times, although under more isolated circumstanees than the world-wide theatre of war to-day, will have some bearing on the trend of prices. To this end were the following incidents reealled in this article.

THE supreme tragedy of modern civilization is war. Impossible as such a thing as this has looked to the church, to society and to business, the evil thing has come.

Two ideas stand up to fight it out. Each combatant must be fed. Instead of the arteries of commerce running full to the succor of peaceful arts, they are now hurrying along with freights of food supplies. There are no frills on the situation. The hard plain facts of supplying bread and meat are super-imposed.

So it is that agriculture becomes intensely interested in this new phase. For the first time in a generation the real grinding heel of war is driving the British Empire into strange economic channels. What will the farmer's position be? How will he come out of it? Will wheat prices reach the level of Crimean memories or will the immense possibilities of the United States and Canada more than offset this? Trade routes have been broken up. Immense quantities of our continent's products are piling up at the seaboard. Industries are shutting down. Through it all how will the wheat, the cattle, the dairy, the poultry and hog businesses go? It is hard to venture a prophesy. The play of world forces is so different. The magnitude of our modern systems of business and social life, with all their finely organized and diversified interests, will reel under the shock. That it must recover and right itself more rapidly than in mediaeval times seems certain. We can adapt ourselves more readily. As in the case of the Canadian soldiers in South Africa and of the British soldiers to-day, an emergency brews its own toxine. We double back and reform in splendid lines to meet the unexpected. So let us hope. Is agriculture educated to play its part? Wherefore all our vaunted agricultural education and specialization unless it gives our average farmer and our collective agriculture a mobility that can overcome, stamina that makes over.

A Triple Alliance Working Harmoniously.
—From the New York Sun.

We may not see the $2 a bushel of Crimea days for our wheat, nor see the house-building days that are told of on many of our Eastern farms. The times of one hundred years ago in English agriculture will hardly repeat, when wheat in the British Isles went as high as $4.25 a bushel. Let us hope that the after-effects of this war may not

leave the trail of poverty, bad farming, poor harvests and discouragement of country life that followed in the wake of Waterloo for over a quarter of a century.

The farmer may feel the stimulus of better prices for a while. Yet to him, in the reorganization of peace, comes the pinch that indubitably writes all war as prodigious iniquity.

Let us look at the conditions of prices and farm revenues in former times. Mayhap we may be able to learn something to guide us in this peril, even if the play of world forces is so grand as to paralyze our petty inferences.

When Europe, a hundred years ago rose to dethrone the Napoleonic idea, agriculture was almost primitive in organization and intelligence when compared with the highly intensive production of the German farmer to-day and with the extensive operations of the North American wheat and livestock growers.

The increase in German productions owing to the intensive scientific work of these people, perhaps state-aided for just such a time as this in order to make the nation self-supporting, has been most remarkable.

If we take a period of twenty years ending with 1910, according to the calculations of H. C. Price, in the *Scientific American* for February, 1913, we find some startling results. The following table shows the average yields of grain in two periods—and the last column gives the percentage of increase in the twenty years.

	Bushels per acre. 1886-1895	Bushels per acre. 1896-1910	20 years' % of Increase
Wheat	21.2	31.2	47.8
Rye	16.6	28.3	70.0
Oats	34.1	57.5	68.6
Barley	24.5	37.2	51.8
Potatoes	130.0	210.1	61.6

INTENSITY OF GERMAN FARMING.

The German farmer has spent more labor and capital on his growing crops than has the American farmer. His fields are really big gardens. His seed is the best that selection can give him, while the feeding by fertilizers is about an exact science with him.

History of Europe justifies the statement that the nations there have shaped their policies on a war footing and the standard of efficiency sought is to be able to produce their own food in case of war.

Great Britain long ago sacrificed her agriculture to manufacturing and commerce. The repeal of the corn laws brought foreign supplies to her shores in sufficient quantities to enable her to build up compact and flourishing industries on her tight little sea-girt isles.

Germany's agricultural policy, we now see, has been wise for herself. She has built up an excellent system of agricultural education. By means of her experimental stations to which the governments of the principalities have made generous contribution, scientific research has made possible the enormous increases in production. Over 16,000 credit banks, with over one billion dollars of farm loans at 3 and 4 per cent. have come into existence under this system. All the while the German nation was building up a war machine on this foundation. It cost them over $400,000,000 a year even in their peace. Truly agriculture is the hewer of wood and the drawer of water for the over-lords. When will redeemed agriculture be supreme and its democracy demand an accounting of these aristocratic drones!

IN WELLINGTON'S TIME.

Owing to the insular position of Great Britain and the world-importance of her flag, agriculture also has had a checkered history. Previous to 1795 before the Peninsular Wars broke out, the farmers were becoming prosperous and content among them was absolute. Suddenly the whole of Europe became mixed up in the Napoleonic conflagration.

There was an emergent call for supplies. Coupled with a bad harvest and the slackening in the foreign supplies by reason of a crippled commerce, wheat prices went soaring. Although for twenty years prices had been under $1.50 per bushel they immediately rose to $2.40 and continued to rise and fall around that figure until the battle of Waterloo, when they had reached the enormous price of $3.75 a bushel. The average price of wheat from 1809 to 1814 was $3.20 a bushel.

WHAT THE BANKS DID THEN.

In 1797, the year of foreign invasion, the war panic led to a run on the banks, which emergency, instead of the moratorium of to-day being declared, led to the passing of the Bank Restriction Act which suspended cash payments and ushered in a system of unlimited credit transactions.

Under this system of unlimited credit, an unnatural stimulus was given to every branch of industry so that business revived with unexpected rapidity. In nothing was it more apparent than in agriculture. The high prices of produce held out a great inducement to farmers to get as much land under cultivation as possible. Pastures were plowed up and waste land brought into wheat production.

But after came the deluge. Upon the restoration of peace, and the re-enactment of corn laws, an agricultural depression set in. This was emphasized by the bad farming of a generation, of war prices, by low wages paid, by the restoration in 1821 of cash payments.

Accordingly we see now a series of agricultural commissions running all the way from Waterloo to the middle of the century. These sat frequently and discontent thrived everywhere. That commissions were appointed in the years 1821, 1822, 1823, 1835 and 1836, showed the gravity of the situation. Lack of confidence among the people prevented any general improvement. The unnatural war activities had given agriculture a body-blow which took half a century to overcome.

RETURNING PROSPERITY.

It is interesting to note the return to prosperity about 1850. The Continental wars of 1848 followed by the unprecedented rush to the United States of a highly desirable class of European farm laborers, built up the Middle West and laid the foundation of the prosperous cities and states of to-day.

This movement towards good times, strangely enough was augmented by the Crimean War in which Great Britain and Russia were vitally interested, as well as later by the Great American Civil War.

While these two wars of half a century ago, drew from agriculture a great deal of its productive energy, yet, the agricultural pursuits thrived in an unprecedented manner. With the United States torn by a big civil war, the farming population prospered. Farm labor rose in value. Farm products enjoyed a handsome recompense. Machinery was called for faster than the manufacturers could supply it.

From 1862 to 1864 the manufacture of reapers and mowers in the United States doubled its output.

AGRICULTURAL MACHINERY TREBLED.

To add to the prices of these times, the years from 1860 to 1862, inclusive, saw a complete failure of crops in Great Britain, so that the export trade to Great Britain tripled its former volume. Agricultural prices rose in these three years from 100 to 200 per cent. Profits to the farm and its tributary trades were enormous. So much so, that this period of war history stands out in the world's history as without a counterpart.

Canada at the same time received some of the same increases and agricultural optimism.

Old residents, our fathers and grandfathers, still refer to the Russian War and to the Civil War times as high spots in their farming experiences. Wheat went as high as $2.25 a bushel on the Toronto markets. Farm lands advanced to unheard of values and sales of farms, although not numerous, were made at $125 an acre, the same farms that for the last generation have not advanced over $60. One farm of 200 acres on Lake Ontario, owned by an uncle of my father's, was tempted to a transfer by a $100 an acre offer. Of course the offer was refused, as most land-owners refused to part with property where the returns were likely to soon pay for the land. This farm, never reached that value again. It being sold about a decade ago for less than $7,000.

"Transfers in land," says Prof. Squair, of Toronto University, "were not numerous in those times. The good prices offered seemed to check sales. I know of land near Bowmanville that is still in the hands of the families of those days for which $120 an acre was refused. Some farms changed hands at these high prices then and the values have never come back."

MANUFACTURERS EXPANDED.

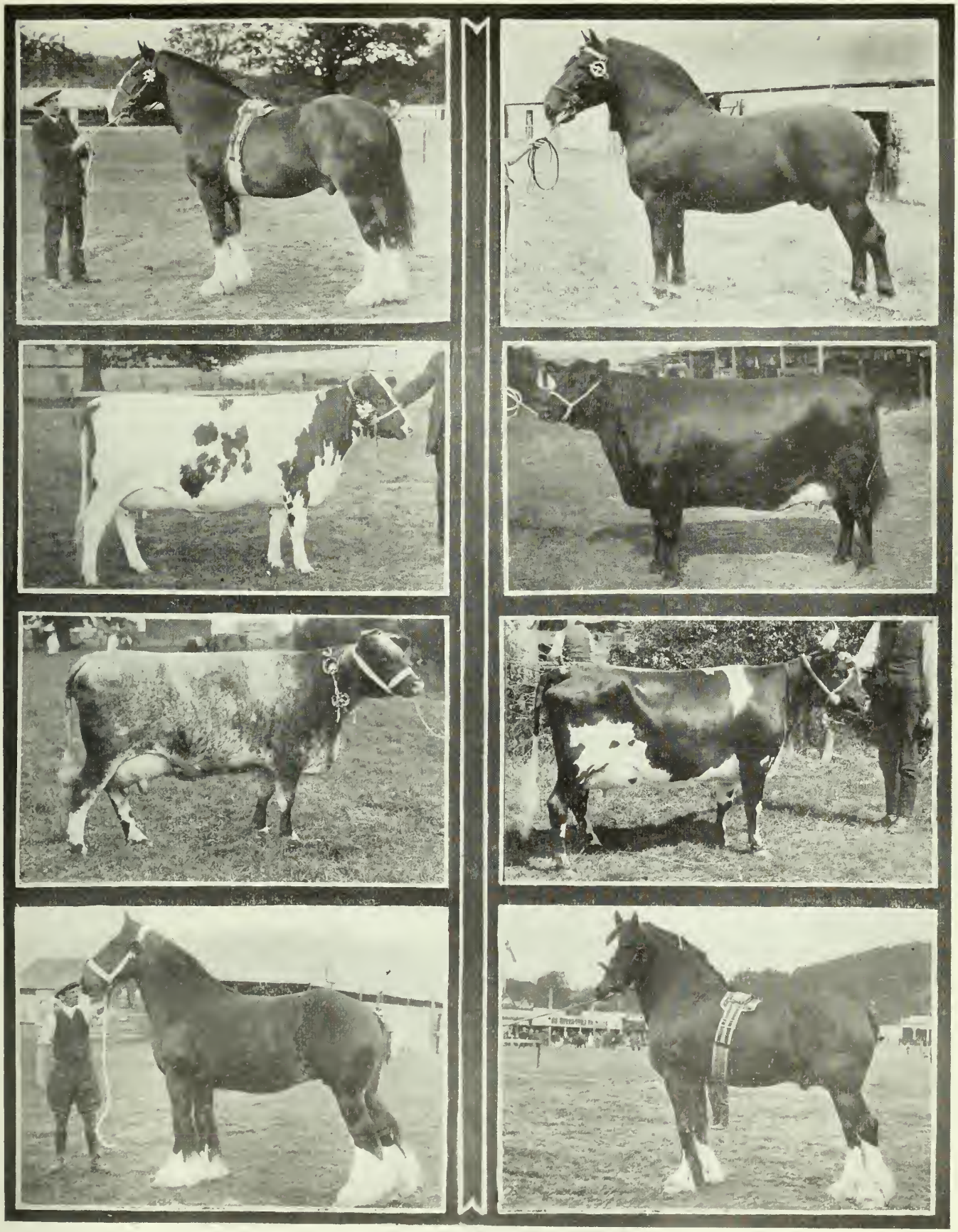
Horses and cattle reached high prices also and manufacturers of agricultural wants grew during this period.

But the depression that followed in Canada in the seventies and up to the nineties is current knowledge.

The situation to-day, in this big world-war, carries many uncertainties and in-

Continued on Page 75.

The Victories of Peace



The Types That Lead This Year In Great Britain

1—"Baron's Seal," champion male Clydesdale, Highland Show, Howick, Great Britain. 2—Ayrshire cow, champion at the Highland Show, Howick, Great Britain. 3—Shorthorn dairy cow, "Primrose Gift," champion at the Royal Show, Shrewsbury, Eng. 4—Shire mare "Marden Constance," first at the Royal Show, Shrewsbury.

1—Suffolk stallion, Sudbourne Red cup champion, Shrewsbury Royal Show. 2—Aberdeen Angus cow, "Pride of Palermo," champion at the Royal Show, Shrewsbury, and champion at the Highland Show, Howick. 4—Ayrshire cow, "Willoxton Blossom V.," first at the Royal Show, Shrewsbury. 5—"Hugh Baronson," first prize aged Clydesdale stallion, Highland Show, Howick.

Dairying in Nova Scotia: By A. Hector Cutten

Three tons to the acre.

The Cool Summers, Well Watered Pastures and Brisk Markets Should Make this Province a Rival of Denmark in Dairy Output

The dairy industry is making rapid developments in the maritime province, due partly, as the writer has pointed out, to favorable natural resources, and possibly more to intelligent methods. The clear, practical outline of these makes this article most valuable reading for any farmer carrying on dairying, even on a small scale. The co-operative measures of the Nova Scotia farmers to improve the stock, the attention to conserving the soil's productiveness, the rigilant testing and culling out, have made the province known for its fine herds and good crops. The figures showing profits from different feeds, the results of winter dairying, and the approved type of dairy barn, will interest every farm reader.

THE Honorable Sydney Fisher, Minister for Agriculture in the Laurier Administration, has stated that he regards Nova Scotia as especially adapted to the dairying industry. This opinion is also strongly held by Mr. Melville Cumming, the Secretary for Agriculture for Nova Scotia, Mr. Cumming states that "Dairying offers to Nova Scotia the means of realizing more money by far than is now being made from any other form of agriculture, including fruit-growing, from fishing or from any kind of manufacture yet established in our country." Mr. J. A. Ruddick, the Dominion Dairy Commissioner has said more than once in the hearing of the writer that he knows of no reason why Nova Scotia should not have an annual dairy production equal to that of Denmark, only two-thirds its size, which exports yearly dairy products to the value of fifty million dollars.

These experts know that several conditions contribute to make Nova Scotia in many respects an ideal dairy country. Our cool summers and freedom from injurious droughts, our well-watered pastures green all through the season, our magnificent crops of hay and roots and green feeds of all kinds, our comparative freedom from troublesome flies, our brisk local markets easy access to the foreign markets are the essential factors that make possible a large and profitable dairy production.

The leaven of co-operation is working among the farmers of Nova Scotia and they meet frequently for the discussion of the problems with which they must contend. The Nova Scotia Farmers' Association is a most representative body. This is constituted of delegates from 220 agricultural societies which exist largely for the purpose of livestock improvement. These societies receive grants from the Government, which are supplemented by their own subscriptions, and with the united funds pure-bred bulls, rams and boars are purchased for the purpose of livestock improvement. Thus high-grade animals have been introduced into many communities that could not otherwise have had this advantage. In addition there are county farmer' associations which bear the same relation to the county as the Nova Scotia Farmers' Asociation does to the whole province. Some of these county associations conduct exhibitions, seed fairs, etc. Some are centers for the co-operative buying of seeds and fertilizers. Others confine their efforts wholly to educational work.

A typical Nova Scotia dairy barn and yard with shelter for the cows in bad weather.

The farmers of Nova Scotia are discovering in actual practice that stock farming is the only kind of farming that will maintain the land in its virgin productiveness. The best farms in the province demonstrate that the soil of a properly managed stock farm may be even more productive after a hundred years of farming than when the first furrow was turned. Can hay farmers of Quebec or grain farmers of Saskatchewan say this of the kind of farming they have chosen? The reason for nearly all the impoverished

farms of Nova Scotia can be readily traced to the easy, I might say lazy, method of selling hay and oats instead of feeding these to livestock, whose products or themselves when sold remove so little fertility as compared with the fertility removed under the hay or grain farming systems. This principle is now being ignored by many Canadian farmers, especially in the West. But a future day will see them driven to feeding livestock. In the meantime, however, the wide-awake Nova Scotia farmer recognizes and lives up to the maxim that "in livestock lies the salvation of Nova Scotia agriculture."

The results are apparent. The dairy production of 1911 was 30 per cent. ahead of 1910. The production of 1912 was over 27 per cent. ahead of 1911, while the production of 1913 was 49.8 per cent. ahead of 1912. During the past two years eight new creameries have been established. These creameries have all been organized on the cream-gathering system. Each one will therefore tap a large area of country and the Department of Agriculture which is largely responsible for their establishment feels assured in regard to the outcome of these ventures.

The dairy breeds at present in Nova Scotia are the Ayrshire, the Holstein, Friesian, the French-Canadian, the Jersey, the Guernsey and the milking Shorthorn. The Nova Scotia dairymen have not yet decided as to which breed suits best Nova Scotia conditions. The fact of the matter is that there is a place for every breed and that there are good and poor cows in every breed. Dairy operations here have been restricted not so much through a selection of the wrong breed as through a failure to stick to one breed after a decision has been made. The beginner who is possessed of sound common-sense chooses the breed that is found to be the most profitable in his own neighborhood or in neighborhoods where conditions are closely similar. But when all is said and done concerning dairy types the merits and value of the cow must be estimated by the Babcock test and scales, having the duration of period of lactation and amount of food consumed, as a basis for calculation.

Our Department of Agriculture is bringing forcibly to the attention of our dairymen the supreme importance of individual cow-testing. The income from a herd may be large while the net profit is proportionately small. If the profit is to be increased and the selling price of dairy produce cannot be controled by the farmer he must seek to reduce expenses. If two or three cows out of every twenty are not producing enough butter fat to pay the cost of feed, any profit from them is naturally impossible. When these deadheads are removed, expenses are immediately reduced and profits on the remaining animals are forthwith increased. Our best dairymen refuse to keep a cow that will not give 6,000 pounds of milk or produce 300 pounds of butter in ten months.

A view taken from one of the experimental farms.

WHAT THE SCALES TOLD.

Mr. C. F. Whitney, of the Department of Agriculture, Ottawa, gives an illustration of an actual case showing the importance of testing. In one herd of twenty-two cows the total value of production at an average of 3,429 lb. milk stood at $888. Allowing $35 as the average cost of feed, the profit was $118. Suppose now that the eight poorest cows, that averaged only 2,510 lb. milk, had been disposed of, leaving only fourteen cows in the herd, the calculation would have been —total value of production, $619, less cost of feed (14 cows at $35), $490, or a profit of $129. This means that all the labor attendant on the care of eight cows for one entire year could have been saved, that $280 worth of feed would have been on hand, and that the profit even then would have been eleven dollars more. The eight cows with the low production were all of mature age, and the fourteen proposed to be left included three heifers capable of development, but which stood below the average yield. It is evident further, that an enormous stride forward towards infinitely better herds would be taken if such a culling process could be put into force on a large scale.

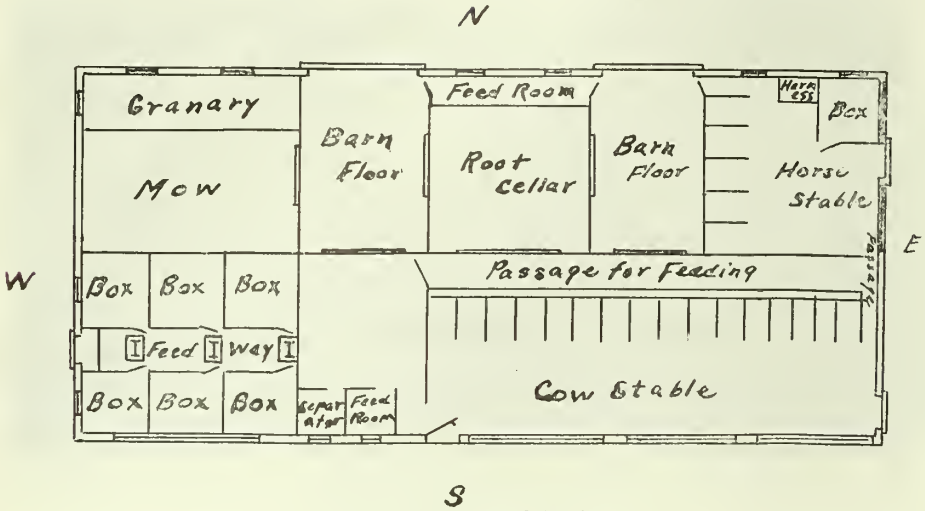
I do not know that any set of rules for feeding stock has ever been of very much service to our dairymen. The farmer's own judgment must direct him. The capacity of each cow to consume food and pay for it, the individual tastes of the animals and the quantities and prices of feeds at the farmer's disposal all enter into this question. Our dairymen find oats and peas a good mixture. They plan to grow about 150 bushels of roots for each cow during the winter. Common or red and alsike clover grow in profusion in this province and the crop is cut just as it comes into full bloom. In storing timothy the writer sprinkles 10 or 15 bushels of salt with 100 to 125 tons of hay. This helps to preserve green hay and makes the food more palatable. Dairymen should always remember that the more palatable the ration the better will the cow thrive upon it. Well-cured hay does not differ greatly in analysis from poorly-cured hay but gives decidedly better results. Straw when cured and mixed with pulped roots and a sprinkling of meal will give a better return than if three feeds were given separately. Again a mixture of grains will generally give better results than any single grain. I may add that one has only to recall the fact that water forms from 40 to 85 per cent. of the total weight of an animal according to condition to realize the importance of a pure and continuous supply of water.

Mr. Howard Corning, of Chegoggin, Yarmouth County, the principal breeder of Guernsey cattle in Nova Scotia, states that beginning in June he usually has three or four plots of good clover pasture. The cattle are pastured on these alternately until about July 20th when he has oats, peas and vetches ready for soil feeding. This keeps up the flow of milk until about September 1st when the aftergrass is plentiful and sustains the herd up to about October 15th when the plot of cabbage is ready. Turnip tops come in about November 1st, and on November 20th the herd is put on winter feed of mixed clover hay and turnips with a little cottonseed

Scene on a Cape Breton dairy farm.

meal to add protein to the ration. Mr. Corning raises about 200 bushels of turnips for each cow, 100 bushels for each heifer with calf, and 50 bushels for each yearling. This allows him to give each cow about 60 pounds pulped turnips a day in winter, and all the grain feed given is from half-pound to two pounds of cottonseed meal per cow per day. The quantity of cottonseed is governed by the amount of clover in the hay and by the requirements of each cow. He always feeds cabbage, turnip tops and turnips soon after milking and by giving each cow what she will eat up clean, he is not troubled with turnip flavor in the butter.

Some Nova Scotian dairymen believe firmly in the advantage of winter dairying, and have their cows freshen during the month of November and December. The cattle are by that time in the barn and accustomed to their winter diet. They are given an abundance of succulent feeds such as mangels or corn silage and large quantities of clover hay. They are also fed all the meal that they pay for in the pail. In the spring after five or six months of steady milking they go on the grass and increase considerably in their flow of milk, and produce well until it is time to dry them off in the fall. It has been found that cows which are freshened in the fall give more milk in the year than spring freshened cows. The fall is also the best time for the calves, as by the time they are weaned the spring grass is ready for them. Calves are fed whole milk for the first week or two, then separator milk for four or six months. Clover and grain are given as soon as the calf will eat them.



Plan of the writer's dairy barn.

By having the cows freshen in the fall most of the dairying is done before spring work begins, and thus by balancing the year's work the labor problem is solved. It is far more convenient and more profitable to keep one or two men the year round rather than several in the summer and none in the winter.

The chief argument against winter dairying is the high cost of the foodstuffs that will produce the milk. The Dairy Branch of the Nova Scotia Agricultural Department has kept for two years a record of the yields of milk and fat, the cost per month and the profit and loss from each cow of the dairy herd on the Agricultural College farm. The herd consists of 26 cows and heifers of three breeds, viz., Ayrshires, Holsteins and Jerseys. Bran was valued at $22 per ton, middlings at $24, oil meal, $39; cottonseed meal, $35; ensilage, $3; hay, $10; soiling crops, $5; turnips, 6c per bushel, and pasture at $1 per head per month; these being fair figures for the past two years. The cost of feed to produce 100 pounds of milk monthly was approximately as follows: January, 71c; February, 75c; March, 78c; April, 79c; May, 80c; June, 18c; July, 34c; August, 55c; September, 58c; October, 68c; November, 66c; December, 71c. It will be seen that milk is most costly to produce during the months of March, April and May, owing

Continued on Page 69.

The writer does not favor basement stables, and has arranged windows to let the sun have full play in the building

Setting An Anchor Post:

By J. MALCOLM MacDONALD

An attractive farm gateway. The inconspicuous fencing does not mar the view.

The Boss Has the Delusion that a Long Stretch of Fence Pulls Heavier on the End Posts than a Short One

Setting an anchor post may be one of the most prosaic tasks of a life time, until one understands the philosophic principles back of the process. A new and clever contributor outlines these here in a most humorous dialogue where the boss's conservative methods are overcome by the scientific arguments of the hired man. The point established may be a revelation to many of our readers, and whether it is or not, the article is worth reading for itself.

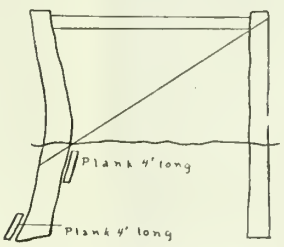
ONE of the most important things to do when you start to build a fence is to shut the boss up in the silo or corn-crib or have him arrested and sent down for a short term. This ensures you against annoyance and enables you to think out and simplify difficult situations. This thinking out things is of the utmost importance. It is done under a convenient shade tree with a pipe and matches and is not disagreeable, if the boss is securely corraled. If he is at large you have to be well posted in geometry, geology, trigonometry and the technical language of the fence game to convince him that the things you do are necessary. In the present instance I had a conflict with the boss before I had worked an hour. He had the projected fence staked out in the most unreasonable place, the site adopted for one of the anchor posts being a cradle knoll. This was an occasion where I had to think things out. I figured that the rain had been for many ages running blithely off that cradle knoll into a little hollow alongside; thus the clay would be dry and hard on the knoll while the hollow, after absorbing the rainfall of centuries would be moist and cheesy and I resolved to dig there. When the boss arrived he pointed to the knoll and said, "I wanted the end post there."

I went into the subject exhaustively, urging that a field should be rectangular; that at present the field was a rhomboid and needed just two feet and three inches right there to make it geometrically perfect. I gave him every argument but the one that convinced me. I kept that one concealed in my breast. The boss disclaimed all knowledge of "Ramboards," and expressed a distaste for the exact sciences generally in language which I considered unbecoming at the time.

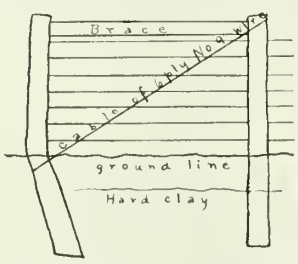
"But," he said, "I know where I want my end posts and I own this here farm!"

The most annoying thing about the boss is his imperturbability. After you have talked with him a little while your eye begins to wander around in search of a stone to throw at him . It seems the only way to impress him and I have pessimistic moments when I doubt the efficacy of even that.

The type of auger that I use in my daily penance is one that I have christened a "harpoon." It has other aliases, among which I might mention, "jab-augur, jabberwock, punch-augur, prod-augur, man-killer, fool-killer," and many others, which proves that fence builders are men of great literary resources and spend much time in getting things named. It has a barrel thing made of steel that looks like Dad's dinner pail with a slot up the side and a gas pipe for a handle. You jump away up in the air, point the augur where you expect to set your post and then come down heavy with the augur underneath. This is supposed to drive it into the ground and sometimes it does, especially near the surface where the earth is soft. You do this a great number of times and then you notice by the extra weight that a thin cake of clay has got stuck in the thing. You pull the augur out and strike it on a block until your arms ache, and by that time the augur will be hot and the expansion of the steel loosens the clay and it will roll out—a beautiful round thing like a large brown tea cake with little pieces of drab limestone in it. As the hours go by and your weapon sinks deeper and deeper into the bowels of things it makes a deep bass, entertaining noise like your voice will sound, when you are reeve, and make your maiden speech at a meeting of the county council. You have noticed the surprised look on the faces of some people when they begin a maiden speech. It is due mainly



The way the boss wanted it put in showing inclined plane in the direction of the pull, the tendency being to raise the post.



The ideal anchor. Some job, you see, to break that hard clay.

to this deep sepulchral tone turning into a squeak. But I am telling too many things at once.

While building the fence I had several struggles with the boss and I am going to tell you about them. The argument is usually the most strenuous work about the fence business, and as I don't charge for it my talents are used very freely. One fence was a stretch of about one hundred rods and the boss insisted on having an anchor post in the center. The boss has a superstitious delusion held by many farmers that a long stretch of fence pulls heavier on the end post than a short one, as if a weight would weigh more on the end of one hundred rods of wire than if suspended by a foot. I explained to him that it was merely the coil next the post that pulled it even if the fence extended half way round the earth. I illustrated by standing a lot of imaginary men in a row and letting the man farthest from the post pull on the others. Pity and patience were written in the boss's eyes. I had a line wire stretched to guide me in digging holes and I took hold of it in the center, pulling it first towards one end and then towards the other. It worked quite freely as the spring in the coils is at that point well balanced.

"Do you think," I said "that if I planted the Rock of Gibraltar at that point and stapled this wire to it that it would ease the strain on the end posts?"

One has to talk loud to the boss and sometimes you have to talk a long time, feeling all the while as if you were alone in a park, talking to a granite rock. I threw so much vigor into the last part that he condescended to explain his proposition to me.

"I'll tell yeh," he began. The boss always begin thus. He says it with the air of one who has information to impart that will settle the matter for all time. You feel as if the decisive document is about to be tabled and the final formalities of the last judgment to be gone through with. He talks in jerky instalments, doing something else between sentences.

"Take a horse, hitch him to bushel of sand on a mile of rope-'n'-begad-yeh'll stick him, see?"

I am reporting his voice, his eye went on making remarks like, "You poor, presumptuous, shallow-minded, post-hole artist."

My faith in mathematics is supreme. I felt backed by all the authorities since Adam. I felt that I was putting up a battle for the right. My gums were a trifle sticky, due to swallowing so much, otherwise I was cheerfully confident of victory.

"Friction," I retorted dryly.

"Fiction be darned," said the boss.

"Remove the friction," I argued. "Give the long rope the same angle of lift from the sand bag to the point of draft on the horse's shoulder and you'll see."

That "point of draft" talk was a solar plexus blow, and I was proud of it, but not even a quiver of an eyelid rewarded me. Hitting Gibraltar with my knuckles would have been more gratifying. The boss just said, "Huh."

Now "huh" isn't an argument, and it was not intended for one. It expressed a conviction that I was not worth arguing with. He turned his back on me, a broad expansive back like that of a Clyde horse. I have more courage when his back is towards me.

"According to you," I blazed, "we don't need any anchor post at the other end at all. Just a cheap miserable bag of sand." And you ought to have seen the look of intense scorn I drove straight at the back of his coat collar. He turned around then and looked at me scorchingly, witheringly. He seemed surprised that I did not shrivel.

"Say," he said hurriedly, "I've got to get my crop in. I can't stand here all spring showing you how to build a fence." Then he stuck a little stick he had been whittling into the ground alongside the wire.

"I want an anchor post," he said, "right there. I want it braced both ways with wire cables on it. The wire is this here stuff," he explained kindly, tickling the line wire with his forefinger, "and I have money, nice white money that I am going to give yeh when it's done and yeh can go and buy gum and stuff."

He got hold of the lines and said "Gee, George," and my poor motion will be considered six months hence. You see it's no use talking to such a man.

We had another difference over how an anchor post should be placed. The post was a huge crescent-shaped oak spar and I had to get him to help me plant it. He wanted to put it in so that the outside of the curve faced the fence with a piece of stout plank back of the bottom and another in front, just under the ground.

"I tell yeh," he said, "It'll pry better that way."

"Pry the deuce," I retorted. "You appear to be laboring under the hallucination that we are about to pry the earth off its orbit and put in a new foundation. That, gentlemen, is not the intention of this here party. An anchor post isn't a pry. It's a hook—a hook d'ye hear! that catches in the ground."

I got a nice smooth chip and drew for him a beautiful picture of a ship's anchor.

"Say," interrupted the boss, "you learned fence building in the navy, didn't you?"

"Some of it," I said stiffly. "If you were making a ship's anchor you'd hook the horns t'other way so it would slip easy like a toboggan and let your bark drift on the cruel rocks."

"This is a different fix up," said the boss in some doubt."

"Not a bit," I replied.

"A ship's anchor is a rigid piece of iron," he protested.

I placed my hand majestically on the brace cable, then on the brace, and pointed grandly to the brace post. "Here," I said, "you have a rig framed rigidly on the same principle as a ship's anchor. The cable does the trick. This thing stays in the ground for the same reason that a plow does. The team pulls upward and so does the man but the plow goes in. It works like a cant-hook. Anchor posts are as amenable to reason as plows or cant-hooks"—but the boss interrupted me.

"This here agricultural industry," he snorted "would be pleased with less oratory. It don't matter if you do plant it wrong. It's heavy enough to stay put."

So I planted the anchor post as shown in the illustration. If you take the trouble to figure it out you will see that that is the only correct way to put in an anchor post and even if you do not take the trouble it will still be correct.

Lecturing to anchor posts has been my humble occupation for nine years and I can assure you that when you know an anchor post well you have acquired the most important things to know about other people's. I have endeavored to show them the error of unbridled ambition and have exhorted them to remain in the humble calling whereunto they have been called. I have succeeded to a remarkable degree even when there was every sign of moral obliquity. Some of my anchor posts have become so enthusiastic as to be almost fanatical. A farmer told me this spring that he had to nail pieces on the anchor posts I put in for him to restrain them from drawing the whole fence down into the bowels of the earth. This shows a new danger and disturbs me more than did the advent of Halley's comet and my efforts this year are less emphatic.

The picturesque and permanent old stone fence.

The desire to possess a piece of earth, plant it, till it and watch it blossom forth into fruitfulness under his own personal husbandry is a wholesome thing for any man.

The Lure of the West

The Price of Pioneering, and a Vision of Its Possibilities Have Given Western Canada a Virile People

By W. D. ALBRIGHT

My soul is sick of the cities and the crafty strife;
And if gold were all and greed were all, I have had enough of life.
But ever in my dreams I hear the moorland music creep
To the heart that shall be aching till I sleep.—*Thos. Moult.*

The wholesome, optimistic vision of this writer brings us a breath from the wide untilled stretches of the last great pioneers' territory of Canada. In answering the common query, "Why leave behind the comforts and conveniences to which a family have been accustomed for a sod or log house in the raw new West?" he sets forth the wonderful promise of the country in truths that come as a revelation to many Canadians. The northern plains of Alberta are not rich in grain and stock growing possibilities alone, but in a class of settlers of stamina, character and culture.

THE door of Opportunity stands wide open in Canada to the enterprising young farmer of to-day. Not a copy of the FARMER'S MAGAZINE but bears testimony to the success achieved in one province or another by the application of brains in farm work and management. Examples cover every phase of production from fur-farming in Prince Edward Island to fruit culture in British Columbia. Ontario, with her splendid dairy farms and thousand-dollars-per-acre fruit plantations is by no means an exception to the rule. All our Eastern provinces are rich in opportunities for the specialist. Drained of rural population by cityward impulse and by persistent migration Westward, their farms are unable to meet the fastidious demands for fruit, eggs, vegetables and meat which the growth of cities has brought into being. Accumulation of urban wealth has developed a purchasing class to whom quality is everything and price but little object. The alert producer has but to comply with the requirements, deliver the goods and command his custom. Small fortunes are within reach of the ambitious industrious young farmer of the East. Expanding markets stimulate effort. Science infuses new interest into his work. The wide diversity of production possible lends zest to his occupation. Attractive rural homes equipped with modern conveniences, make life worth living. Machinery has reduced drudgery, gasoline power spares elbow grease and now electricity is the great white hope which bids fair to revolutionize rural dynamics in the household, in the stable, on the highway and possibly even in the field. The lot of the farmer in Eastern Canada has been cast in a goodly place.

And yet the Western trek continues.

A home at Beaver Lodge, Alberta, having its sod roof replaced by shingles.

Each spring and fall sees its thousands of homeseekers and harvesters entrained at Toronto and other railroad centers responding to the siren call of the West. Some are Old Country lads who have bided a time in Ontario and are now going further afield. Some are Eastern-reared farm boys, a few are from city bench or desk and some are Eastern farmers who have sold out and are going West. But why so far? Why leave behind the comforts and conveniences to which a family have become accustomed for a sod or log house in the raw, new West? It seems to me there are at least four main factors:

1. Land hunger.
2. Example.
3. Expansiveness.
4. Novelty and hope.

Land hunger is a primal instinct of the human race and a healthier appetite never directed the ambitions of man. The desire to possess a piece of earth, plat it, till it, and watch it blossom forth into fruitfulness under his own personal husbandry is a wholesome thing for any man. For this privilege wars have been waged on battlefield and in forum. History acclaims the yeoman the pillar of the state.

To thousands of men the West with its free homesteads offers the best or only chance of acquiring land for themselves. In the older-settled communities land is capitalized at a figure beyond ready reach. The young man starting with small capital, the fruit of thrifty savings, finds his dollars will purchase too small a unit of property to operate economically; and after he has his land, there is further call for thouands of dollars of working capital if the advantageous operation of a mixed farm is his goal. The more prosperous the agriculture of any particular section, the higher land values rise and the farther opportunity is pushed beyond the reach

of the man of limited capital. So it comes about that only those of unusual thrift, industry, business acumen or those with inherited means may hope to secure an early start on land of their own in the East. This condition has been steadily developing for years past and will become increasingly evident as time goes on. Hitherto the existence of vast unsettled tracts of arable land on the earth's surface has tended to limit the value of occupied farm land. The last great area of unoccupied land in the civilized world is now being settled in the Canadian West, the present cynosure of immigrants' eyes on two continents. Once this is taken we shall see a world-wide corner in land. Those who hold it will prize it and those who do not will be prepared to tax their resources to obtain it. Then watch land values soar. A psychological realization of this fact is leading many on to earn by the privations of pioneering a foothold in the still vast expenses of the Canadian West.

Example plays its part in the Westward migration. Mankind has something in common with the sheep. It moves in throngs. Twenty years ago the West was beckoning the pioneer almost in vain. The tide had not started, or perhaps we should say, it had subsided. Tenants and owners of farms in Ontario were struggling along, eking out a meagre existence, ignoring the call of the West. Advertising started a movement to the plains, which presently became a rush. The rush has continued in unabated volume, one settler following another's example to such an extent as to lead off many who were comfortably circumstanced in their former homes. Population moves in flocks.

THE LURE OF VAST OPEN SPACES.

The bigness of the West is attractive. The forested regions east of Lake Superior were won with much labor, foot by foot. No wonder the grandchildren of Eastern pioneers are lured by the vast open spaces of the plains, where in a few years one may put under the plow all the acres he can work or can hire men to work for him. Big fields, big implements, big enterprise are the rule. Expansiveness, opportunity, scope is the great idea of the West. To stand at your shack door and look out across ten or fifteen miles of gently-sloping plain, dotted every day or so with the tent of a new homesteader, to follow the half-mile furrows of black-loam breaking, to survey whole section blocks of wheat shooting into head or ripening unto the harvest is to experience the thrill of the wide horizon of the plains.

But there is more. Perhaps the strongest attraction of the West is its newness, the surprise of its successively discovered resources, the impulse of its abounding growth and the buoyant promise of its future. The demonstration of Western Canada's grain-growing and stock-raising possibilities has been a panoramic revelation. Long derided as an inhospitable waste fit only for the trapper and the Indian, it was finally put to the test by the Selkirk colonists, who at least proved that settlers could subsist. A long history ensued, checkered with disappointments. But perseverance conquered Nature and Manitoba challenged attention as a premier wheat-growing province. Then step by step the grain belt crowded west and north. Saskatchewan and Alberta took rank in the wheat belt, the latter province with mixed farming as a distinctive feature. Now at last we are finding that the Greater Alberta lies north of Edmonton in the tremendous sweep of territory watered by the Athabasca, the Peace, the two Slave rivers, the Mackenzie and that wonderful chain of northern lakes. Here is a veritable empire of territory which yesterday was merely outlined on the map. Athabasca Landing, Peace River Crossing and Dunvegan were geography names of about as much real import to us as the names of the constellations. Now we have seen these places, passed through them, done business in them and are soon to know them as railway stations. Indeed, Athabasca is already so distinguished. Within this territory lie resources that seem likely to make it the most prosperous and self-contained province of the Western plains. Many millions of acres of black-loam soil have already been indicated well fit for stock-raising and mixed husbandry. Vast measures of coal exist, as well as oil, gas, asphaltum and other minerals. Quantities of merchantable timber are available for building purposes and fuel. Great stretches of navigable water-courses occur with Niagaras of power waiting for an Adam Beck.

It is all nascent. Development has but commenced. Out of nothing we are privileged to watch an immense empire grow and grow with it. That is the lure of the West. Have you never felt it? Never known that buoyant surge of adventure that sends the settler chasing the homestead over the end of the trail, making iron and leather of men, heroines of women and martyrs of toddling babes? More than land hunger impels the true pioneer.

Whilst the development of the West has usually been discounted by the speculator, its actual growth has been chiefly sound and solid nevertheless. Wide fields yield swiftly to the breaking plow. Railroads hasten through them. Stock yards, elevators and mills arise. Each week some fresh development is noted. Constantly the prospect changes. Grande Prairie, whence I write, was colonized five hundred and fifty miles in advance of the railroad and even yet the head of steel is little over half-way toward us, though now coming fast. Still Grande Prairie's million or so of acres are pretty extensively taken and three villages are established. Week by week the Edmonton newspapers chronicle a new railroad or business enterprise projected for the North. We dwell in a field of action. Conspicuous changes have already been wrought and greater will follow the locomotive.

A serene and tranquil maturity is typified by the average Eastern town. Optimism and energy with the interest of kaleidoscopic change are predominant characteristics of the West. The viewpoint alters at Fort William. The plains have a soil aroma, an atmosphere and a firmament all their own. It is good to feel and know.

But the fact which has impressed me most and upon which I have dwelt before, is the superlative character of the settlers in the New North. English-speaking with hardly an exception, representing in cosmopolitan variety nearly all the provinces and states of North America, as well as the British Isles and the best nations of Northern Europe, they are a class of citizens of which any community might boast. Not alone are they people of character, but education and culture prevail. One of our nearest neighbors is a graduate of the Iowa Agricultural College; another a B.A. of McMaster, and so on. The leading professions are well represented among the homesteaders. A process of

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A scene at Beaver Lodge baseball diamond on the occasion of the annual sports, Victoria Day.

Fixing Up the Country Place

Some Ideas About Out-door Improvements and Simple Landscape Gardening for the Farm Home

By ALEX. MacPHERSON

The cottage with its tall old elms and its cellar-winder corner snuggling deep into a clump of lilac bushes makes a better home picture than the big new building set in treeless surroundings.

September is an excellent time for improving the farmhouse grounds. The planting of evergreens and certain ornamental shrubs, the improvement of the lawn, the laying or repairing of cement walks about the place, in preparation for the fall and spring rains, can all be done now. In this article we have some new and practical suggestions for making barren places beautiful, and adding to the dignity of the farm home.

A FARMER generally has to put in a few years of straight, hard pioneer work to build a home to develop enterprises, to get on the road to safe and comfortable living, so the beautifying of the surface of the earth about the house is one of the things left until the last. This is unfortunate, because making a landscape garden of the farm grounds takes years of growth, and because we cannot afford to live in unlovely surroundings. They may be simple and poor, but they need not be ugly. Neither are large, pretentious buildings necessary. The old house may be as comfortable and more picturesque than could be afforded in a new one; if it is neither comfortable nor pleasing to the eye, but in good repair, it can often be remodeled at a comparatively small outlay.

But it isn't the house that makes the tone of the home picture. We have all looked at the big, new, handsome building set high and bleak on a hill or treeless level and turned wistfully to the little white weather-boarded cottage with a crimson rose climbing over the door, with its tall old sentinel elms, and its cellar-window corner snuggling deep into a clump of lilac bushes, which brings us back to the truth that you cannot buy and pay for a beautiful home landscape; it must come through creative thought, and hours of enthusiastic work snatched from "necessary" tasks, and through growth. Especially important do we realize the growth to be, if our home is planted almost out of sight of a big tree.

Of course, even trees large enough to be of some use for shade can be transplanted from the woods or field to the door yard, but the method is expensive compared with the re-rooting of young samplings, if our ancestors or former land owners had only thought of it. We can discharge our personal responsibility by beginning now. Evergreens are especially desirable for country house grounds, because they preserve the garden aspect throughout the winter and afford a shelter against wind and storm. And the fall is the best time for planting evergreens. It gives the roots time secure a firm hold on the soil before the cold weather sets in. The ground is warm and apt to be moist from fall rains, this enabling the new roots to push out rapidly; and if there is any difference, we have a little more time to do the transplanting now than in April or May.

Until within the last few years evergreens were planted about the farm house for but one or two purposes, either for windbreaks or to screen something unsightly, or for specimen trees. Enough cannot be said in favor of the windbreak or shelter belt, from the standpoint of either utility or beauty. Nothing else gives such a snug, protected aspect in winter, or such an appearance of deep coolness in summer. But the "specimen tree" planting was usually too formal. Very often the specimen was a specimen indeed, standing stiff and lonely-looking, the only one of its kind on a lawn where single trees of many varieties made up something of a horticultural menagerie

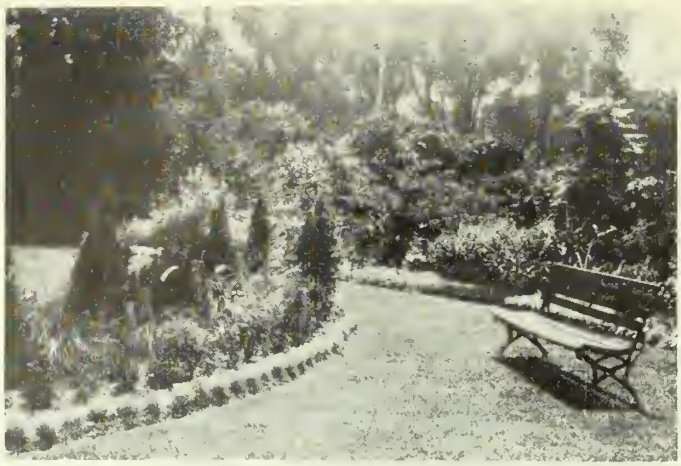
A view marred by an untrained growth of vines and shrubbery, and a fence set close to the house.

The same house with porch and surrounding growth altered to let light in. Note the effect of the large grass plot with the fence removed.

rather than a bit of the woods brought home.

Groups of evergreens of contrasting foliage, give a pleasing array of color, and massed in beds make a beautiful background for flowering shrubs. In combination with deciduous trees they present a year-round attraction giving the "solidity" so essentail to a good landscape garden. The hemlock is admirably adapted for ornamental planting, being attractive at all seasons, but especially so in the spring and summer when the new growth comes out in delicate light green tones. Another favorite is the white pine on account of its long, soft foliage with just a hint of blue on the under side of the needles. It does well as a single tree or in informal groups or windbreak rows. The dwarf mountain pines are beautiful hardy little specimens, while the Scotch pine will give excellent results even under poor conditions. For specimen planting firs, especially Nordmann's fir, are magnificent, the balsam fir being better for windbreaks and shelters. The Norway spruce, grown singly, makes a very handsome tree and is generally popular for its rapidity of growth, adaptability and hardiness. But if you want an evergreen that will stand all kinds of hardship, try some of the American arborvitae and red cedar.

Then there are junipers and conifers and an endless variety of evergreen, as well deciduous trees and shrubs, whose characteristics any reliable nursery catalogue will give more definitely than can be put down here. But however beautiful the individuals may be, the charm of the home landscape garden may be lost by bad arrangement. A tree is a permanent thing so far as several generations are concerned, and should be planted with a reverent and sincere motive. No one can tell another where to plant trees around his own house, to express his own ideal of beauty, nor are rules set down by professional landscape gardeners of much use to the layman, but it is a truth worth remembering that the loveliest forms of garden architecture are those most closely related to the natural growth of forest and meadowland.



Showing flowers bedded around young trees, and a background of massed shrubbery behind the garden seat.

It is true that farm landscapes all over the country have suffered from the work of over-zealous axe-artists. Tall, old trees, maples and oaks and elms, which it would take centuries to replace, whose branches gave a substantial shelter, and whose columns framing the view of the homestead gave a wonderful dignity to the picture—the sacrifice of these may be literally wicked. Yet there is a possibility of having too much sentiment concerning the preservation of trees. Where they grow very thick and close about the house, shutting out the sunlight from a room and causing dampness, they may become a menace to the health of the the family. Where they destroy a view their value so far as appearance goes is less than nothing. So while the axe is a curse in the hands of ignorance and greed, directed by a consideration for healthfulness and beauty, it may leave some charming effects. We have an illustration of the improvement made in a farm house by clearing away an overgrowth of vines, and letting in more light by remodeling the porch.

Arches are not difficult to make and add a distinctive charm to the garden.

Groups of evergreens of contrasting foliage give a pleasing array of color, and massed in beds, make a beautiful background for flowering shrubs.

A beautiful old country churchyard at Ancaster, Ontario.

No farm house is so small or humble that it can do without a bit of controlled nature in the shape of a cared-for lawn. This means some work, of course, both in making the lawn and keeping it cut and level and free from weeds afterwards, but on a smooth, open grass plot depends the appearance of quietude and habitation so essential to a restful home picture. Naturally very steep lawns, or those with many terraces give less of the restful atmosphere, but we have to plan our lawns according to the situation of the house. Then the grading, drainage and sowing can be worked out. The choice of

grass seed, according to the soil is important, as are also the repeated rollings, even after the earth is green with young blades, and the fertilization of the soil every year afterwards. Stable manure, which the city dweller has to buy for his grass plot, costs the farmer nothing except the labor of putting it on the lawn.

The lawn fence is a problem on many fine country places. The ideal, of course, would be to have none, because anything so man-made as a fence, spoils the natural view, but this is seldom practicable. The next best thing is to have it as inconspicuous as possible. There are several ornamental woven wire fences on the market that look very well indeed, with slim posts pointed green, if they get their background against the grass. If close to the house the fence is better painted in a corresponding color. Where the house is built of stone, light brick or cement blocks, a cement block wall around the grounds gives a strikingly substantial and handsome appearance. Wherever it is possible to let the lawn run right to the driveway without a fence or hedge between, we have a more pleasing effect of space and smoothness.

Another indirect benefit following the building of a cement wall, is that you get the cement habit, and you never stop fixing up the place while there is any of it around. Instead of mud thoroughfares in wet weather you soon have cement walks between the house and outbuildings. Instead of sagging wooden porch steps you have permanent concrete platforms, and I have seen one cement carriage stand in front of a farm house that was almost as much a thing of appearance as utility.

Every one appreciates the value of flowers about a house. We don't believe so much now in cutting up the front yard into formal diamond and star-shaped beds. They look too stiff and unnatural, and make a disturbing blotch of color on the smooth green. We want roses about the porch; and salvia and nicotines and geraniums close to the house; and dahlias and asters and sweet peas against the fence; and poppies and foxglove and nasturtiums and sweet alyssium bedded around some young trees or shrubbery; and hollyhocks and golden glow and sunflowers in the backyard, filling ugly corners about the smoke-house and woodshed. In this arrangement their beauty is doubly appealing because it isn't forced upon the attention at the sacrifice of the rest of the view.

Then there are always little odd jobs for the man who is handy with a saw and hammer. A rustic seat, or swing, or gateway means everything to a place because it is uncommon and stands for the personal pride and interest of the owner. In placing seats or lawn swings it is well to make use of the shady spots where it is difficult to grow grass. A unique and pleasing feature of the farm home of Mr. Alexander, Kelso, Ontario, is a fountain on the lawn. The water-supply is piped down to the buildings from a spring in a hill near by, and a branch pipe is tapped by an upright pipe with a perforated cap to make the spray. The upright pipe in the centre of a stone-walled pool makes the entire mechanism, and the fountain splashes away all day. On this farm a hose is used to water the lawn and garden through the summer.

And the beautifying of country grounds should not be limited to the private homes of those interested. In some localities our school yards and our cemeteries, especially the cemeteries, are crying out from neglected dreariness for the touch of a public-spirited gardener. A little interest may leaven the whole community.

Building Up Farm Reserves

Prime Conditions of Seed and Land Where Soil Regeneration is Taken Seriously

By TOM DOBBIN

We have here a fable with a pointed application—only the fable deals with engines manufactured to do a certain limit of work, and a farm is a living thing with a capacity for work practically unlimited. It is to impress the importance of keeping the capacity up to this standard that the article is written, and the illustrations of crop conditions on farms where soil regeneration has been taken seriously, and where all available fertility has been "sold," are most convincing. The ideas are worth thinking about.

HENRY JAMIESON and Peter White served a rich farming community in the capacity of millers. Jamieson's mill was driven by a powerful engine of about one hundred horse power capacity. White's power was supplied by an engine of about a quarter of that capacity. When asked why he had installed so small an engine White replied "Oh this engine will do ordinary work well enough." And in a way he was right. As long as the farmers had time to wait for their grists the little engine got along pretty well. But there were days when spring work and harvest were calling and every hour was gold to the farmer. Then there were rush seasons when every patron seemed to require service at the same time. On these occasions the little engine puffed and groaned but it had no capacity to increase its output. Not infrequently it broke down altogether under the unwonted strain. Meanwhile Jamieson's mill seemed like a school let out. The mighty engine seemed challenging the farmers to bring in more material for its consumption. A large wagon load of grain was changed to meal almost before the farmer had his horse tied in the mill sheds. There was practically no time wasted in waiting. The mill patrons were not slow to see this and White's customers came to go to Jamieson whenever they had a rush bit of work to be done. In a little while Jamieson had a monopoly of the best milling business of the neighborhood. The next step was not long in the taking. White sold out and Jamieson has the whole field. And his big mill is quite equal to the new demands made upon it.

All over Canada may be found farmers whose business practice is represented by one or the other of these two millers. There are farms so kept that they place their owners on easy street. There are other farms than hinder their owners' welfare rather than promote it, so small is their capacity for turning out wealth in anything like paying quantities.

A farm, however, is not like an engine. An engine is manufactured to do a certain limit of work. A farm is a living thing whose capacity for service is practically unlimited. No matter how well an engine may be cared for it must depreciate in value through use. With a farm the use to which it is devoted may increase its value and add to its life. There is such a thing as the destruction of a farm through mismanagement but there is the possibility of adding to its productiveness by proper tillage. The farmer who knows his craft is careful to keep adding to the reserve powers of his land. That the time has come for those interested in agriculture to give serious thought to this problem is now apparent to all.

SOIL REGENERATION TAKEN SERIOUSLY.

A trip through some of the longer settled portions of Canada this summer made it abundantly clear that the time has come for the farmers to increase the fertility reserves of the soil. During the days of the drouth one witnessed that one farm withstood the test of the lack of rain with little apparent loss in growth. Harvest has proven that these same fields have seemed to hold their own in grain production even if they are behind their best performance in the way of straw growth. On the other hand whole farms were brought perilously near to the point of total failure by the drouth, both as regards straw and grain. The fertility of the fields was the determining feature. The poor farm succumbed to the disadvantages of the season, while the land that was well supplied with humus passed

the test with a fair margin of credit. This was a lesson from the drouth so plain that even the least experienced had no difficulty in learning it. The proportion of fields that showed a decided lack of fertility was not large, but while this, happily, is the case there were enough defective fields to point out that older Canada will do well to take the question of soil regeneration quite seriously.

One cause of the soil depletion has been the system of tenant farming that has been in vogue the last number of years. Farms have been let on short terms and at a rental that has made it imperative for the tenant to take out of the soil all that was possible. Unless he did this the end of the year found him short in his accounts. His one aim was to farm with an eye to production. A very few such rentals as this and the farm became poor to the point of failure. A similar cause for soil depletion has been the high cost of farm labor. The owner, in this instance, has been driven to make all he could out of his land in order that he might have a little to himself for his year's work.

Further, the foolish notion persists that a farmer can go on selling the product of his farm without loss of fertility. The worst form in which this theory shows itself is that of selling the hay and straw and grain. A very few years of this practice and the man slowest to take notice discovers that he is a loser. Nor has the dairyman been altogether blameless in this regard. He is doing better by feeding his grain, but he must remember that every can of milk that goes off his premises represents a very considerable loss of fertility. The same holds true of the stock feeder, though he is in a better position to maintain soil fertility than the dairy man. The important fact to be considered is that when anything goes off the farm the farm is by that amount the poorer. It will not do to say that one may maintain fertility by cultivation. Cultivation simply liberates the soil's fertility. It does not add to the soil's resources. On the contrary it is a channel through which the soil's mineral and other resources find escape.

IMPOSSIBLE TO KEEP FERTILITY AND SELL IT.

Nor will it do for the farmer to think that he can keep up his land simply by feeding the grain grown thereon and by green manuring. Both of these practices are helpful, but they do not go far enough. Let a farmer take what care he may of the manure produced in his farm and there will always be a considerable waste. When to this waste is added the loss that comes from farm sales of grain, cattle, poultry, or dairy products some idea of the extent of the soil loss may be ascertained. While the legumes keep up the supply of nitrogen in the land, there is a loss of potash and phosphorus that cannot be made up by the use of manures produced from the farm's own products nor by the use of legumes. This is the situation that confronts the farmer. The loss that accrues from the sale of the farm products cannot be made up for by any system of field husbandry that does not return to the land the constituents that have been removed from it.

Consider, in this connection, the loss accruing to a field in corn growing. Sixty bushels of corn require about fourteen pounds of phosphorus for the growth of stalks and corn. The stalks alone require about four pounds of phosphorus. When the stalks are left on the land to be plowed in as fertilizer the loss from the growth of the sixty bushels is about ten pounds per acre. Average barnyard manure contains about three pounds of phosphorus to the ton. It will be seen, then, that to to compensate the field for growing sixty bushels of corn that it must be enriched by about four tons of manure. True, when the corn is fed to the farm stock the loss is not so great, but when the stock is sold off the farm, or when milk is sold, there is loss that must be made up. Animals retain about one-fourth of the phosphorus in the grain fed them. Again, before the manure is returned to the land there is almost sure to be a further loss of about one-fourth of the phosphorus of the grain and forage crops fed to the animals. Putting it in another way, under average farm conditions, the farmer who would keep the mineral balance true in his soil will need to apply to an acre of his land about as much manure as is produced from the crop grown on two acres of his land. In actual practice it will be found that relatively few farmers have enough manure to compensate their fields for the phosphorus taken therefrom in crop growing. The man who is a grain or hay farmer rather than a stock feeder or a dairyman is, of course, in the worst plight and must face at once the problem of soil depletion. He cannot both retain the fertility of his land and sell it.

A great deal may be said in favor of green manuring, crop rotation, and the growing of clover and other legumes. In this connection it must be remembered that these methods of farm husbandry make the pre-existing phosphorus more readily available but do not supply any phosphorus. They help to larger crops of grain but do not add an ounce of phosphorus.

PRIME CONDITION OF SEED AND LAND WITHSTANDS DROUTH, FLOOD AND FROST.

Fortunately for the average farmer his land has a large supply of mineral fertility. It stands to reason, nevertheless, that he does well to keep as far as ever he can from the verge of starvation in this respect. Experience has proven over and over again that only the land with the large reserve of fertility can be depended upon to yield at least a fair crop every year and a bumper crop when the season is favorable. For one thing, seed experts have found that grain grown on land rich in all the constituents of crop production tests well in weight. The bulk may not be much greater than the grain grown on soil less hapily endowed with plant food but the quality of the grain is much higher. This is borne out when this grain is used for seed purposes. The plants such grain yields have a vigorous constitution that enables the crop to withstand drouth or frost or unusual moisture. In the older parts of the country where grain has been grown for generations bacterial and insect foes of plant life have a way of massing their forces and only the farmer whose land and seed are in prime condition may hope to come out on the winning side.

There are three ways in which the farmer may keep his land rich in plant food. If he lives near a large town or city he may draw manure from the large stables and in this way supply all that his fields require. The difficulty with this method is that manure secured from town or city stables may have been depleted of a great deal of its strength by careless handling before the farmer secures it. Moreover, such manure is likely to abound in wet seeds, and no farmer can afford to import seeds that have a way of finding access to his land without his bringing them. The second method is to apply mineral fertilizer directly in the form of potash or phosphorus compounds. Some have had good results from this practice. The farmer who would follow this method of soil enrichment will do well to begin his efforts in this direction only after he has secured the experience of others who have made a success of this method of soil building. The average farmer will waste a deal of money by using these expensive fertilizers unless he applies them in the light of actual experience.

WHAT A WIDE ROTATION DOES.

Again, the farmer who would keep up his land and even add to its store of fertility will do well to make his rotation of crops as wide as possible. There is the matter of beans and peas, for an instance. Lately farmers have found it difficult to to grow peas with any degree of profit. In such instances the problem has been to secure a nitrogenous crop to take the place of the peas. Fortunately in any locality where corn may be grown, beans may be cultivated with advantage both to the field and the farmer. When both peas and beans may be grown, so much the better. It is significant to note that where beans are cultivated, a seeding to clover or to fall wheat is rarely missed. Twelve or fourteen acres of beans should be grown on every hundred acre farm. Widening the rotation has the advantage of lessening the enemies to which any grain crop is subject. In addition to this each crop has a way of adding to the soil some form of plant food that can be supplied from no other source.

It will pay the farmer to take care of his land. His soil is about the most honest thing in his possession. It never fails to give value received for good tillage. The money judiciously expended in its enrichment never fails to come home. For many a day to come the farmer's problems regarding soil fertility will have to do with manuring. The primal consideration will be the keeping up in his fields of an abundant supply of decaying animal and vegetable matter. Along with this will go careful farm drainage. Unless the land is free from an excess of moisture the air cannot circulate through

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A Bungalow for the Prairie

A Farm House Where Architectural Charm is Combined With a Common Sense Plan for Convenience and Comfort

By GENEVIEVE

ALL the great creative joys that fill the lives of men and women come through the building and making of homes. Without the inspiration of this, our literature and art and music would be as unimpassioned as the tools used in their making; without its influence human lives would cease to be human—we would live as herds rather than as individuals and families.

And the ideal of any creative work is a vision of the result. The keener the vision the more satisfying the result will be. Strangely enough in the masterpiece of craftsmanship, the building of a home, the owner's vision is often vague and half-hearted. There are a few people glad to shift the responsibility over to an architect with a few stipulations concerning the number of bedrooms, and perhaps an order not to spare expense in making it big and handsome. Several prosperous years have enabled them to afford a house just as good or perhaps a little better than their neighbors. But the men and women on Canadian farms generally realize that a country home is a permanent thing, so they plan and dream over it until they have something original—something simple and honest and beautiful that expresses their ideas of living.

In a ready-made plan, chosen at random this is almost impossible. It does not conform to the family's habits of living, nor to their ideals of comfort or fitness. What is quite as important, it is likely to be out of harmony with its natural surroundings. The big new house on the prairie, with broken roof lines and shoulders jutting out here and there against the sky, does not make a picture as charming as the little sod hut, in the same location. But the day for sod huts is past. They were never ideal dwelling-places, yet they give us a cue for prairie house-building. They suggest something snug and compact with earth-hugging lines—which means a bungalow.

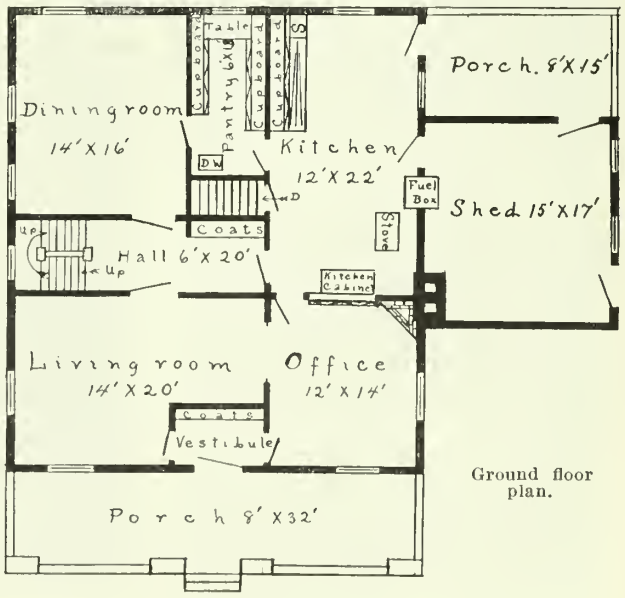
We cannot look at a house like this without feeling the dignity and restfulness of its rugged simplicity, and if it is our home, a certain pride in the thought that it isn't common.

The low, earth-hugging lines of the bungalow make it an ideal type of house for the prairie, where the new farm homes going up are too often over large, inconvenient and ungainly, or if handsome in themselves, too high and elaborate for a wide, treeless background. The rugged, substantial, snug appearance of the type shown, and the compact, convenient interior layout, make it a most desirable farm home for any location, but particularly adapted to the prairie.

The type of bungalow shown here makes a charming farm home, even in a setting of hills and trees; but for the prairie it is ideal. The square substantial construction and the heavy porch and roof and stone pillars are not easily shaken by winds. The building is set close to the ground, and while it has the appearance of being low, there is ample headroom upstairs, even allowing an attic under the ridge of the roof. But looking at a house like this, we forget all about the details of attics and bedroom ceilings; we only feel the dignity and resfulness of its rugged simplicity, and if it is *our* home, a certain pride in the thought that it isn't common.

In planning the interior, the aim has been to provide for comfortable living and convenience in doing the housework. Inside the front door a living room on one side and to the office on the other. The vestibule might be left out of the plan, giving more space to the living room; but besides preserving the privacy of the family when business visitors call (which is not very important, since country hospitality makes a guest of every visitor); this little entrance affords a place for leaving coats and rubbers and keeps snow or mud from being tracked into the other rooms. The living-room and office are separated by sliding rooms, giving a room right across the front of the house when the two are thrown together. The fireplace in the office then has its best effect.

It might be more desirable to have a fireplace in the living-room, but this



Ground floor plan.

Second floor plan.

would necessitate having another chimney, and after all, the office should be one of the most cheerful rooms in the farm home. It makes a snug little den, just off the kitchen; it is fitted with a desk and bookcase, and when you want to read or write or think, an open fire gives just the right atmosphere. It is advisable to have two flues when the chimney is used for both the fireplace and the kitchen stove, and in this case the chimney could accommodate a stove in the shed should you care to fit up a laundry there.

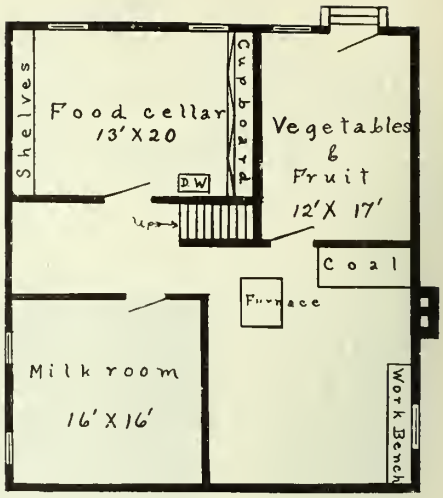
Having only one stairway, we have made it approachable from either the living-room or kitchen by leaving a hall between the living-room and dining-room. The stair is placed at the end of the hall, turning at a landing half way up to economize space. At the end of the hall, near the kitchen door, a wardrobe is built for overcoats, driving gloves, and the numberless things that the housekeeper generally tries to keep out of sight in the kitchen. By making a place for them when the house is built, she is saved considerable work every day.

And this is only one of a great many ways in which the builder can make housework easier. The layout of dining-room, pantry and kitchen is compact and convenient. A dumb waiter comes up in the pantry. The sink has a large drain board with a cupboard above it. Its distance from the stove may appear awkward, but the sink in a farm kitchen is used for so many purposes that we consider it more convenient for the housekeeper to have it not too near the range. A kitchen cabinet, or a cupboard with a wide counter-shelf, a bakeboard and compartments for sugar, flour, seasonings and cooking utensils is within easy reach of the stove, and just back of the stove we have an excellent labor saver in a fuel box which can be filled from the shed. An opening about three feet square is cut in the wall and the box in the kitchen fitted with a tight lid, so no draught can come through the opening.

On the second floor we have made the hall narrower than the one downstairs. If we were having an attic it would be necessary to allow extra width for an attic stairs to go up beside the main stairway. Where the roof is low, at the four corners, the space is used for closets; but with the wide dormers at both the front and the back we have room for four good-sized, well lighted bedrooms and a bathroom.

In the cellar, which is cement-lined throughout, there are separate rooms for keeping the milk, cooked food, vegetables, and the furnace. The isolation of the dairy room is particularly important if we are to keep a superior quality of butter and cream. To ensure uniform heating through the house, the furnace is set well to the center, the coal bin extending along the wall to a chute coming down from the shed, where the fuel is stored in quantities.

Several changes might be made in a house of this type. The roof might be raised a little and the dormers dispensed with, without seriously weakening the effect, provided, of course, the stonework remain as it is. It is this that gives the individuality we want. Instead of stucco, walls of frame or white or yellow brick could be used, the latter being very durable and handsome with field stone. Whatever the material, the simple, dignified architectural lines and the happy living and working arrangement of the interior, make this a distinctive farm home.



Layout of the cellar.

Doing Things Over In-doors

THERE are two times in the year when the thought of doing things over especially occurs to us—the spring, when we are beginning to make our summer plans, and the early fall, when we first think of getting the house ready for the winter. This occasional doing over and repairing, as every housekeeper knows, is absolutely essential to keeping things in good condition and the good housewife is just as punctilious about keeping all her possessions in good repair and ready for immediate use as she is about having them arranged in an orderly manner. It would be foolish to reiterate what a good manager knows almost intuitively, but there are several aspects of the doing-over process worth mentioning because they will serve as timely reminders to some while to others they will afford new and practical suggestions.

At the very outset it would be well to remember that the doing over of our houses and their furnishings, quite apart from purposes of material preservation and good repair, has also another object scarcely, if any, less important—a welcome and needed variety of arrangement and a freshening change of aspect. To frequent visitors it is extremely monotonous and to those who live in a house it is narrowing and injurious to see every chair, every table, every sofa, every bit of bric-a-brac in precisely the same spot and looking exactly the same, month after month and year after year. Merely for the psychological effect upon the occupants of a house, if for no other reason, the furnishings ought to be changed about from time to time and the general interior aspect varied in an agreeable manner.

Now, as to a few specific suggestions for carrying out schemes of doing things over; there is no single agency more potent than a change of color for giving a new aspect. Let us suppose, for an instance, that there is some room in the house where the light is not so good as it might be and where the walls or woodwork are dark in tone. Why not do that room over and completely change the whole color scheme while doing it? If the door and window trims and the baseboard or wainscot are of hardwood do not let that fact stand in the way of your contemplated change and doing over. Go ahead resolutely and have the woodwork painted any light color that may be desirable despite the protests of ultra-conventionally minded advisers who may object that it is a piece of vandalism to cover good walnut or oak with paint. Your answer should be that the wood was injudiciously used and wrongly placed to begin with, and that the mistake of a builder or architect made years ago should not deter you from rectifying the blunder although it involves transgressing a cut and dried convention

How many housewives have looked, time and again, at some of their bureaux or chest of drawers, made in the unlovely style of the early '80's and regretted their graceless aspect! Structurally they are too good and sound to relegate to the attic or to give away. Then, too, they are useful and there is nothing to take their place. Such cases are by no means infrequent but they are far from hopeless. The framework of these unalluring members of the domestic collection is often fairly good in line and proportion, and if the annoying and fussy glued-on ornaments are removed they exhibit a marked improvement. Under such circumstances the very best thing to do is to have the offending embellishments torn off and then have the piece thoroughly sandpapered and painted, gray or cream or whatever color is deemed desirable, and either rubbed to a satin finish or given a coat of enamel.—*Barbara Caye.*

About 400 sheep were gathered by the trained collie. They made a fine flock.

Sheep Farming in Manitoba

Where a 150 Per Cent. Lamb Increase Has Added $1,500 to One Farmer's Income this Year

By F. C. MacKENZIE

All the prairie farmers of Manitoba are talking mixed farming. Everyone is getting into livestock in some form, and consequently at every railway station one may see woven wire fencing by the carload, and alongside the big grain elevators the whitewashed fences of the leading yards for livestock—striking evidences of the coming of the mixed farm—and it is well. There is more human interest and community spirit where horses, cattle, sheep and hogs are a-plenty. It is to be hoped that the war will not disorganize these farmers from the policy they have begun. This is a story of a small sheep farm a few miles north of Winnipeg.—EDITOR.

SHEEP enthusiasm is running high on most prairie farms. Their value as weed destroyers alone is giving the movement a big push forward. For weeds are assuredly making forced marches to occupy the erstwhile wheat lands. And this is one reason why the movement to mixed farming is making such headway in the west. Everyone wants to get into sheep. The lack of wire fences and the presence of coyotes are two deterring reasons, although the money question does figure some also in the pace that is being set.

Despite the slowing up of the financial operations, carrying with it a lighter volume of farm sales, the old enthusiasm of the prairie farmer still burns brightly in the eyes of these good-souled tillers of prairie loam.

It was hot July weather. The thermometer ranged for a fortnight around the century mark, but the stores of successful and hopeful agriculture made my tour of Manitoba extremely interesting. It was a revelation to me to find such good farming lands north of Winnipeg. Who knows but yet the Hudson Bay route may take the traveler through and past some of the most prosperous stock, and even grain farms, of the West. Strange things are happening in this western land. It was into this part of the province that I ventured for a sheep story.

To live in a store in Halton County, Old Ontario, for 75 years and then to pick up and squat his family down on virgin soil, was as interesting to me as it was novel to Wesley Andrews' father, whose 87 years sat so lightly upon him as he talked to us of his farm near Stony Mountain.

"I brought out four ewes from Halton County, Ontario, when I came here fourteen years ago," said Mr. Andrews. "Two died that same year and I have bought no ewes since. The sires have been Oxford Downs and I have kept the best of my ewe lambs for breeding. To-day I have a flock of good ewes from which my farm returns are going to be quite satisfactory this year."

The coyote is a dangerous enemy of the prairie flock.

A horseback trip to the lower quarter soon brought the flock to the buildings, nicely situated on the most prominent part of his 640-acre farm. Nobody walks on the prairie; even little girls are agile and quick on horseback. The mile-distant pasture fields make necessary these equestrian manœuvres. It astonishes the easterner who is accustomed to acre fields and 40-rod lands to listen to the way the western farmers and their families talk. Wheat fields a mile long; wire fences bought and erected at so much per mile; a twenty mile run to town and so forth, gets into the blood. They live in a wide world and breathe the air of their boundless freedom. Their healthy spirits invigorate one and the visitor pulls himself out of the rut and widens his mental longitude.

THE FLOCK AT NIGHT.

And such a flock of youngsters. The black-faced beauties gamboled into the expansive barnyard full of the country's vigor. About 400 sheep were gathered by the trained collie. The ewes were showing somewhat the strain of the motherhood of lusty twins, but they soon recover when the wheat stubbles become their feeding grounds.

They made a fine flock. About 120 ewes had lambs this season. These were mothering 185 hearty youngsters that gave every evidence of the paternal blood of old Oxfordshire. Their black faces showed the stamina and vigor necessary for the northern plains. The balance of the flock consisted of shearlings and

wethers. Two or three aged rams from Ontario's pure bred herds were also with them. One old fellow was already almost in his dotage, but he had been an aristocrat in his show days.

GOOD REPUTATION OF BREEDERS.

"How much did you pay for these rams?" I asked.

"I send to the same breeder in Ontario for my stock rams because I know him, and he always ships me animals true to type and perfectly sound. Like the merchant who has built up his business on integrity, the livestock breeder who survives with the personal friendship of his customers is the man who does no crooked work. I paid $25 for him as a lamb landed at Winnipeg."

"Those lambs," indicated Mr. Andrews, "are from 120 ewes which, you see, gives me an average of over 150 per cent."

"No, I did not have these lambs come in the spring. They began coming in January, as you see from their size, and began life on the open prairies, in many cases with a thermometer of 30 degrees below."

This astonishing information made me look for the reasons for this vigorous vitality. To have success like that falls to few in the sheep business, and if it is a secret, farmers would do well to learn it. Whether Mr. Andrews revealed all or not, the main story of the flock management is easily told.

In fact, sheep on the prairie require very little extra care and equipment. These ewes ran out on the prairie all winter whenever the sun was shining, and that means the most of the time. An open shed seen in the illustrations covered them at night. To this the flock had free access at all times; but on the coldest nights the sheep would prefer the barnyard and would drive them inside. Sheep here, as elsewhere, can stand dry cold. Shield them from wet and driving winds and they will resist low temperatures surprisingly well.

This flock were allowed winter run of the wheat straw stacks. There they picked up some grain left from the machines. They gained in flesh, and not one sick sheep was reported by Mr. Andrews during the past winter. He raised a few turnips which were sparingly fed to the flock. Outside of this they received little attention.

Lambing time began in January and continued till April.

"I have seen lambs come out in the open with the mercury away down, and beyond a slight freezing of the tips of the ears, the young animal was soon lively and vigorously active in the rustle for its food supply," said Mr. Andrews.

Although all prairie flocks are not so fortunate in the saving of lambs, this past year's returns were exceptionally good for this farm. The gain of 185 lambs from 110 ewes in one year will be hardly surpassed anywhere. It speaks volumes for the care in waiting for the selection of breeding ewes and for the prolificacy of the Oxford crosses. There is no reason why a ewe should not raise twins, and it is equally as probable that care in these matters would result in a larger percentage of lambs in the average flocks of the country. A ewe can raise twins almost as well as singles. Some of the twins in this flock were individually better than some singles. A wise selection from the prolific mothers for breeding purposes would in any case result in bigger returns.

In my own case I can believe this because of the returns from a small Cotswold bunch purchased at Grasmere last year. Six ewes bred to a young Cotswold ram were delivered to the farm late in December. These ewes have been selected for their prolificacy by a Mr. Jones, who gave the sheep exceptional care. The result of the lambing season showed 10 lambs from the ewes, or the same percentage of increase as was obtained by Mr. Andrews in his prairie flock.

"Are not your losses heavy here?"

"No; on the contrary, only six lambs died and I blame myself for all these, with

Seeing whether the lamb has any teeth.

ADVANTAGES OF SHEEP RAISING

1. The sheep is a dual purpose animal, producing both wool and mutton.
2. The initial expenditure is small. Every farmer can well afford the investment of the necessary capital in a few sheep.
3. Rapid monetary returns are received, the wool clip and the lamb crop being saleable annually.
4. Expensive buildings are by no means necessary. A warm lambing pen is required, but for the aged sheep, a sheltered shed to protect them from the winter winds is alone sufficient.
5. Weed destruction represents another asset. Sheep will eat and relish almost every class of weed.
6. Sheep admittedly improve soil fertility. Their manure is rich and uniformly distributed.
7. Except at certain seasons of the year, less time and attention need be bestowed upon the care of sheep than in the case of almost any other animal without thereby endangering successful results.

The above has been sent out by the Dominion Department of Agriculture in its effort to increase sheep raising in Canada.

Their black faces showed the stamina and vigor necessary for the northern plains.

the exception of two. Of course, there is always the danger from prairie wolves. I house or yard my flock every night as a precaution. Other persons in various parts here reported big losses from coyotes. One farmer reports his success as a result of his good hounds. The hounds seem to relish this sport and clean out the whole section of these sneaking robbers."

Another way that sheep pay the western agriculturist is in the cleaning up of weeds. Across this section of Manitoba there has come with a strange persistence the milk thistle, well known in older parts. It grows luxuriantly in the black prairie soil and covers the whole surface. I saw fields here 50 acres in extent which were one solid mat of thistle from center to outside. Sheep have a peculiar palate for this plant, eating its roots and even digging into the soil for them. A proof of this was explained by Mr. Andrews, who pointed to a big field of Banner oats just heading out.

"This field was my summer fallow last year. The sheep had access to it all the season. It was infested badly with sow thistle in the beginning. Repeated discings brought roots to the surface, and these with any green that showed were eaten by the sheep. So the winter came on with the field practically clean."

This field of oats, that would return probably 75 bushels to the acre, was perfectly clean of the pest.

A field of banner oats that will probably return 75 bushels to the acre. This was badly infested with sow thistle until it was summer fallowed and given to sheep pasture last year. By winter it was practically clean.

FLOCK RETURNS HANDSOME.

Returns from the flock are always interesting to the farmer; in fact, this is the chief raison d'etre of the industry. Wool prices at the farm this year were 16 cents, so that the average of 9 lbs. of wool gave a handsome return. Many persons in this year of short wool supplies and of recent war devastations predict 25 cents for wool next year. Predictions, though, are not to be relied on.

"I find a good mutton market right here at the farm," replied Mr. Andrews, "and last year I received about $6 a-piece for the lambs. The market this year looks to be more promising, and I will likely realize the $7 each. This will make a fairly paying proposition for my sheep business."

As regards the Oxfords for grading up purposes, Mr. Andrews selected these sheep for their good points. The Oxfords are large, handsome sheep, very alert and active on their feet. Their fleece is the longest of the down breeds, while the quality of the mutton is good.

At first they were called Down-Cotswolds by reason of their origin. John Talmadge Twynam, of Winchester, England, took the initial step in 1829 when he mated improved Cotswold rams with finely bred Hampshire down ewes. Continued and persistent cross-breeding soon established a type. They proved to be very prolific. One English breeder, W. H. Treweeke, reported 194 lambs from 100 ewes, among which there were 76 with twins, 9 with triplets, and only 15 singles. It is little wonder, then, that the Oxford Down Flock Book states that: "As good wine needs no bush, so Oxford Down sheep need little recommendation to practical farmers."

Especially good to the prairie farmer looks the future for sheep breeding.

The Romance of Bee-Keeping

Honey Sales on a Mixed Farm Average $1,200 in Fair Years

By ETHYL MUNROE

To the man or woman with a love for nature life, there is no more fascinating occupation than caring for a few colonies of bees. To make a profitable business of bee-keeping, however, requires more than this: a good deal of careful management, close attention, and work. We have a case here where all these combined to make one of the remunerating branches of mixed farming. The reader will note that this is not a report of this year's returns. Here, as elsewhere in Ontario, the honey crop this year was almost a failure, but this will clear the market and wholesale houses of a great deal of old honey, promising an excellent market next year.—EDITOR.

IN the warm sun of a harvest afternoon, the orchard of Clearview Farm is alive with a song from the vibration of a million wings. If you haven't an ear for Nature this just means that the bees are busy. If you don't know bees and something in the sound stirs a spirit of inquiry, you have a new chapter of mysteries to explore; for the man who built and colonized these hives, who watches the daily goings out and in of the tireless insects has a story for the layman. It was the love of a naturalist that inspired the honey trade here, and the one hundred and fifty hives set under the apple trees had a humble beginning.

On his way home from the hayfield for dinner one day thirty-five years ago, the farmer found a swarm of bees hanging on a bush. He brought the branch home and started his first colony in a raisin-box. Later he bought one hive and worked up all the rest from his own stock until he had as many as two hundred and twenty colonies. The number is now cut down to one hundred and fifty in order to avoid overstocking and to keep the bees busy and contented at home.

The farm affords abundant pasturage for this number of good strong colonies, however. While bee-keeping is only one of every ordinary branch of mixed farming carried on on the two hundred acres, it is considered in every relative branch. Acres of white clover blossom for the bees every year. Alsike, which is quite as good for honey, is sown with all the hay not wanted for seeding. There are fifty large basswood trees and about two hundred small ones on the place, a very important provision as the basswood blossoms when both swarms and parent colonies are populous, when other bee-forage is scarce and the clover honey has been extracted. The hives have an ideal location, on a mown grass-plot in a corner of the orchard, in full sight of the house, but where they will not be annoyed by people or stock passing. They face southward, slanting toward the entrance, of course, to aid the bees in carrying out waste, and protecting themselves against robbers, and to prevent rain from beating into the hive. For winter protection, half of the hives are put in the cellar, the rest are kept outside, packed around with forest leaves.

The stock here is made up of both black and Italian bees. While orthodox teaching probleims the superiority of the Italian, and our apiarist is a thorough student of bee literature, he has found the "common bee" to be as good a honey-

The hives have an ideal location in a corner of the orchard.

The basswood bloom looked promising this year.

gatherer, and better for making comb-honey. The comb of the black bee is whiter, and free from the watery appearance frequently found in Italian sections, where the caps are set very close to the honey. The remarkable fecundity of the Italians, however, makes them invaluable in keeping the hives protected from insect enemies. Strong colonies with a fertile queen never suffer from the bee moth. It is only when a hive becomes queenless and the colony too feeble to protect its empty combs that the moth gets a foothold, and the empty combs have to be smoked with burning sulphur or fumigated with carbon-bisulphide to kill the eggs. The thriving colonies here have had little trouble from the enemy, nor has foul brood ever attacked them.

But this isn't where the bee-keeper finds the enchantment of his work. In the ordinary course of the year's work some wonderful things happen in bee-life, which might pass unnoticed or unheeded by a mind with less imagination. Some sunny noon he discovers a young queen making ready for her initial flight. She makes a few circles about the hive and comes back to the alighting board. She has been hatched only about five days and is well pleased to find her wings. Several short tentative trips she makes, probably taking stock of the dormer over the entrance, or the forsaken robin's nest in the branch above, that she may know her home when she returns from the most important journey of her life, for many a queen has lost her life by attempting to enter a strange hive. Then she sails straight up into the heavens followed by a host of sharp-eyed drones, each bringing certain martyrdom upon himself by fulfilling the only destiny Nature has fitted him for. The queen comes back from her wedding trip alone; mating occurs only once during her life and ends tragically for the king.

This much we can see from outside, but the bee-keeper may look within the portals of the city. He blows one puff from his smoker into the hive, and the guards are harmless. The bee's first thought is for her precious stores, so she consumes such a quantity of honey that she cannot sting. Then the cover is lifted and when we find the right frame we can see her royal highness at home, busy with her ceaseless egg-laying. In the height of the season she lays about six eggs a minute or about three thousand a day, and she keeps this up for several weeks. No wonder she is shown such deference by the colony! A circle of her daughters may be found around her, embracing her with their antennæ, or offering her food, and all of them politely backing out of her way when she moves over the combs.

If it be not late in the season and the colony very populous we may see several curious little objects like long peanuts, which receive an unusual amount of attention from the workers. In a short time the bees will swarm, that is the old queen with thousands of her subjects will leave the hive, and they are providing for the continuance of the colony at home by rearing royal princesses, one of which will take her place. Most apiarists who use movable frame hives prefer the artificial multiplication of colonies, but this is a real bee-keeper who loves the excitement of natural swarming. He hasn't even adopted the practice of clipping the queen's wings yet to prevent her leading the swarm afar, and he never loses any. After you have brought your first colony home from the field on an uncovered branch, the capturing of a swarm in the orchard is not a formidable undertaking.

As soon as a young queen, feeble and pale, emerges from her cell in the old hive, she travels over the combs in search of a rival, even piercing the cells of unhatched queens, after which the workers carry out the dead bodies. Should two queens hatch at the same time, a battle takes place until one or the other is killed. Nature has provided that the duel cannot end in the death of both.

Still another wonder is to be seen at the entrance of a hive on a hot day—another work quite as important as the honey-gathering. This is the ventilating of the city. You will find a force of devoted citizens standing in a row at the opening, their tireless wings whirring like a miniature electric fan sending a rush of pure air into the hive to keep the atmosphere clean in spite of the breathing of its forty or fifty thousand inhabitants. This current of pure air is necessary not only for the respiration of the mature bees but for hatching the eggs and developing the larvæ, and to ripen the honey and evaporate the surplus moisture. Sometimes in very hot weather the bees put on an extra force of ventilators in an attempt to lower the temperature, but the shady location of the hives here, makes this unnecessary. A good system of natural ventilation is also provided for by raising the corners of the hive and placing a block of wood about three-eighths of an inch high under each corner.

With the exception of making the sections, every department of the bee-industry is carried on at home. The lumber for hives, frames and supers is sawed up and put together on the farm, and in the early days of the industry before manufactured sections came on the market, our bee-keeper made these for himself. Thirty years ago he bought a foundation mill and ever since has made foundations for his own hives and for sale. In making foundation at home he reckons a saving of from twenty to thirty cents on every pound. This does not allow for labor but the work is done when other demands of the farm are least pressing.

A detailed explanation of the process of foundation making would require too much space here, but the principle of the method is interesting. The beeswax is first melted and placed in a deep vessel, which in turn is placed in another vessel of hot water, the latter to keep the wax liquid. Previously, "dipping boards" have been prepared. These are simply thin boards of proper size, smoothed off with sand paper and the edges sharp, so that the sheets of wax (one on each side) will seperate easily. These boards are dipped into the wax, raised up, and then redipped until the required thickness is secured. The sheets are now to be run through the foundation mill, which makes the hexagonal impression, or "foundation" of the cells seen in completed comb. The machine has two rolls like a clothes wringer, through which the sheets are passed. Of course these sheets are placed in warm or hot water before the latter operation to keep them soft and pliable. The finished sheets are them trimmed to required size.

And another of the romantic features of bee-keeping is that you do not know a year ahead how much your bees may bring you at the end of the harvest—nor how little. This year the crop was a disappointment, but last year and the year

Continued on Page 55.

Land O'Gold:

By JUSTUS MILLER
Illustrated by MISS MARY V. HUNTER

Some Organization Work and the Vision of a Home Where Old Fashioned Ideals of Faith and Trust and Helpfulness Flourish

SYNOPSIS OF PREVIOUS CHAPTERS

Land o' Gold is the name of an Ontario farm in a well settled district. An only son who is brought up there finds the mortgage and the uninteresting succession of chores and resultless toil to be a hindrance to his future, and so cuts loose from the farm. He sees it is an education he wants and so decides to attend the agricultural college, but lack of funds drives him into newspaper work at Ottawa. His visions of usefulness are soon destroyed by the sordid grind of the editorial room and he drifts to departmental work, only to detest its blank future. At a Sunday School picnic he meets Grace, the daughter of a lumber king, who sets his imagination on fire. Just as he so plans a telegram from his father at Land o' Gold contains fateful news. His father has been injured at a barn-raising and is unconscious when he reaches home. After the death of his father he decides to carry out his wishes to make Land o' Gold pan out. When he would feel discouraged, visions of Grace appeared before him and he felt that he could not fail. He makes a study of farm conditions and decides that proper business management would settle most of the difficulties confronting the farmers of to-day. He tries up-to-date methods on the old orchard with such gratifying success that he feels safe to borrow the insurance money from his mother and rent sixty acres of old orchard in the neighborhood. In the meantime, Molly makes plans to brighten the social atmosphere of the community, and organizes the "Jolly Old Folks' Club." In the fall the old house at Land o' Gold is remodeled. While Jimmy is preparing to organize a county co-operative association and looking forward with characteristic eagerness and humility to Grace returning Molly's Ottawa visit, his hired man, Jake Smith, breaks the news that he wants to start for himself. He has to make good, because he's in love with Molly. This is the beginning of the Jackson and Smith partnership.—EDITOR.

ON the twenty-fourth of May of my twenty-sixth year my orchards cried urgently for me to be with them. But I hadn't an ear for orchards that day. I was standing upon the depot platform of Albert looking down the rails eastward.

I cannot recall very clearly now how I felt. My most vivid recollections are of an intensely dry mouth and an overwhelming shyness. With each revolution of the powerful wheels flying toward us, came to me a sneaking desire to hide under the baggage truck. Yet I would not have been elsewhere for the world. I am not trying to explain these sensations. They came to me then. That is all I know about them.

She was coming at last! In a few seconds Grace would be there. Before my eyes came a vision for a moment of a sweet strong face flushed with a noble enthusiasm. Then the train pulled in.

"Grace!" "Molly!" —the two dearest girls in the world embraced each other.

"Allow me to introduce my brother," said Molly archly, as I stood awkwardly near.

And then our eyes met again as they had once before at the picnic. I think the stored-up energy of the soul must have peeped out for she blushed and her eyes dropped. But she held out her hand warmly. The next two weeks passed like a fairy's breath. A dozen times I made up my mind to tell her, and a dozen times I made a start. A dozen times I led away from the question lamely, and just as often each night I sneaked to bed like the driveling donkey I was. It did not frighten me to attack the country life problem boldly, but I was desperately afraid of a little slip of a brown-haired girl.

The last day of her visit drew near. The faithfulness of Jake kept the work going or surely the crop that year had suffered.

"What a beautiful life!" Grace said one day as I drove her to see my various orchards. "Are these orchards not wonderful! And all the things I've heard about you too. They tell me here you will be the big man of the county. I knew some day you'd find your stride. Do you remember how bitterly dissatisfied you were with the civil service?"

I hardly heard her. I was immersed in the flood of my own reflections. The beautiful life! Yes, but she didn't see the fight with drought and scale and insects. She didn't know of all the close figuring to cut the cost of production. She had never worried over the pay cheque. The Big Man! Why I felt about as big as a Colorado beetle just then.

Then I surprised myself. I placed my hand over hers and said, "Grace."

She flushed warmly and her clear brown eyes looked at me and through me and into the very depths of me until my soul was laid out, stripped and shivering. And I thanked God that day that there was not a single woman in the wide world who could say I hadn't played fair.

"Grace," I followed, "I've wanted to tell you for just three years what I haven't mustered courage to say until now. I love you. I'm not the big man you've talked about and this life isn't all sunshine. But I have always played fairly and — and — I love you—that's all."

Somehow I couldn't get by that. It seemed to be all there was to say. I have read impas-

A strong little hand nestled into mine, and a true, brave life slipped into mine. They have anchored me ever since.

sioned addresses in novels, I have heard them on the stage, and I had spent hours in secret myself casting about for apt phrases. But in the orchards with her, the one little word expressed it all. I suppose it had sufficed with my fathers.

"Pardon me, if I've offended you," I said humbly, for she was looking away very quietly. "I am presumptuous. I ought not to have said anything."

"Jimmie," whispered a little voice as I gazed miserably at a yellowing leaf.

A strong little hand nestled into mine, and a true, brave life slipped into mine. They have anchored me ever since.

"Oh, Jimmie, you mustn't say you presumed," said Grace as we sat by the lake some time afterward. "How could you do so? You are a boy and I am a girl. It has ever been so. Race or creed or money shouldn't matter. Riches! how I hate them. If money could make the skies any bluer or the heart any truer I would love it. But it binds us with fetters stronger than steel. It puts us in a world by ourselves—an empty dismal world. It has broken my mother's heart and it is breaking mine.

"We are not of the set it has placed us in you know. We just grew from the people who do things. There is little for us to do now. We live by rule. Money excludes us from the world of deeds. Father used to tell me of the men up north who braved the waters and the forests. I have felt a great longing sometimes to be free, to accomplish things myself. Most of the fashionable young men I know are like Jack Harvey. They are polite and smooth, but they know too much and they never work. The mothers are only acquainted with their daughters and the fathers do not know their sons.

"My mother hates the life we lead. She roughed in the woods once with father. That is why she can recognize worth, and that is why she was glad to know you, Jimmie. I think you brought a breath to her of a free life and of open lands from this grand old county.

"So in my heart I've grown tired of a leisure, cultured class who worship entertainment. They serve a purpose, no doubt, but they are not the ones who are building up Canada. It's the boys and the girls of the wide lands, and the lakes and the forests; of the mines and the railroads who have faced quick death in many forms that supply the motive power. Imagine Jack Harvey sleeping in a trench, or developing a great business!

"I want to live and love and work as my mother did. I don't want to be a clinging vine and to be always shielded by you. I want to be a comrade and a friend, to face the sorrows and the joys, the battles and the victories with you. I have a vision of a couple going downward through the years, hand in hand, repaying kindness with kindness. It is very sweet to me.

"We of our sex have been taught to believe that when a kindness is shown us by men we confer a favor by accepting it. How tired I am of that falsity. It has helped to make the different standards of morality for men and women I believe. A kindness surely is a kindness whether given to a woman or to a man. I think it is a survival of the old fantastic forms of chivalry. Ancient chivalry was a hideous monster clothed in a rich mantle. Men spoke fairly, but their deeds were vile. Womanhood was not a holy thing to them.

"I want to be loved just for myself and I want a home where the old-fashioned ideals of faith and trust and helpfulness flourish. I want to feel that I am making it so and that it couldn't be home without me. Oh, Jimmie, my home life has been terrible. You don't know of the cloud that has hung over it. I'll tell you of it sometime."

Again I saw the spirit of the lumber king glow in her eyes. What is there to compare to such a woman's heart, pure and kind and steadfast! I have never ceased to marvel that God has been so good to me as to bring such a one into my life.

Grace was not a large girl, and yet she was the largest I have ever known. 'Tis the spirit that makes the person and by the spirit we must judge them. Why some of the largest men in body I have ever seen have been poor little chaps, out-at-elbows, begging upon the corners. Others of small stature have been giants, charging the windmills in their paths as though they were clothes-pins. Little old Napoleon was a small chap, but he tore Europe asunder. Goliath was a great fellow and he fell by the hand of a shepherd boy. 'Tis one of the paradoxes of life.

Darkness had fallen that evening when we returned to Land o' Gold. Mother looked up as we entered. Dear old Mater! We didn't need to tell her anything.

It did not frighten me to attack the country life problem boldly, but I was desperately afraid of a little slip of a brown-haired girl.

"God bless you, children," she said softly. "You have all your lives before you. Always be generous and true and kind and I shall never fear for you."

Then she looked away across the glimmering fields and I saw her eyes grow misty. She was looking toward the pine trees on the little knoll where a cold white stone shone wanly in the moonlight.

"That affected me more than I can tell," Grace told me the next morning. I must tell you why now, Jimmie, or you won't understand some things that may seem strange to you.

"I told you of a cloud that shadowed our home. It is very hard to tell of it for mother and father have been on the verge of separation for years. It was the money that did it.

"When they were married dad was poor and they didn't have an easy time at first. But mother tells me of all her life those first few years when they worked together were the happiest. Then dad made good—and he couldn't stand success. The gold coiled a chain around his heart that squeezed and squeezed. So he grew colder and harder and harsher. Came jealousy next as generosity died. Everything mamma did he questioned. You have heard the awful things he says about women, but you have never heard what he has said about poor mother and me. It is dreadful. Of course our home is beautiful and our social position is at least assured, but that is part of the game, too. Father just grew to love gold more than the making of it.

"Oh, the curse of money when it grips people and squeezes them. You thought we were wealthy, but in all of Ottawa there were no people more poverty-stricken than mother and I. Even father is poorer than the barber who shaves him. He is a slave to the money business. Poor, poor daddy, he has forgotten that mankind is the business of each one of us.

"I am of age now and may do as I please, of course. But what will mother do when I have gone! Isn't it pitiful? And we might be so happy."

"Poor little girl!' I soothed, stroking her hair. "It is hard, awfully hard! I know cases just like it right here, too, more's the pity."

That evening she left for Ottawa. She smiled bravely but the trouble in her eyes belied the smile. She was horribly miserably afraid of her father. Yet when I would have gone to tell him she implored me to stay.

"Oh, no! no! Jimmie," she pleaded. "It will only make it worse. He wants to sell me to someone with money. Don't let him know, yet; he'll just make life miserable for me. I'll tell mother first. Let me plan with her what steps to take."

And so I left it to the ladies. It is a clever man, indeed, who can outwit one of the daughters of Eve; but let two combine and his case is hopeless. So it proved.

And now I went back at the farm game in dead earnest. I had something to strive for in all truth. I worked with every faculty alert—with a determination to grasp every opportunity.

The crop was not quite so heavy that year but I had increased my area. Be-

sides the expenses were not quite so heavy. When I straightened my books I found myself with a total capital on hand of four thousand dollars in cash. Better still I was taken now as an authority. I had the confidence of the men in our district, and I had awakened a wide-spread interest in the apple game. It proved a sorry blow to the bark lice and the caterpillars but it helped out the spray companies.

That winter I devoted my energies to organization work. I held an initial meeting in our parlor, of the farmers in the vicinity who had developed the apple idea. I was elected chairman of a committee, thereat, to make arrangements for a larger and more representative meeting.

This was accomplished by a house to house canvas of the promising men in our territory. On the twenty-first day of January, they assembled in the council chamber in Albert, our county town, one hundred strong. As I looked into their rugged, forceful faces, I knew at last I was doing a man's work.

Mother looked up as we entered. Dear old Mater! We didn't need to tell her anything.

When the count was taken, I found that I had been elected manager almost unanimously, and that Jake was president. After the others of the executive and a board of directors had been elected, the meeting was adjourned pending the drafting of a constitution.

At this committee meeting the business went forward rapidly. We adopted as a slogan "A fancy price for a fancy product," and made it compulsory for members to grow fancy stuff. By the constitution each one had to agree to practise all the best methods of orchard culture, and to use a sufficient quantity of spray material to thoroughly treat his trees. They agreed upon a rigid inspection and to sell only through the association on pain of a fine of fifty cents a barrel. It was agreed to recommend that I receive a commission of twenty cents a barrel on all sales made.

At the second general meeting of the members in February, all the clauses were adopted and a motion was carried that we apply for a charter under the Ontario Companies' Act. But some demurred at my commission.

"Well, boys," said big Bill Mason. "I'm for the twenty-cent commission. I've watched Jackson for a long time and I know he's made money for himself. The difference between his price and yourn has been more than twenty cents. And that's all we have to care about. I move that he be given this commission providin' he can get us a larger increase in the price, over what the buyers pay, than twenty cents."

The motion was put and carried. Old Bill had at least become a disciple.

Now there was no magic in my sales. I simply put up fancy fruit in a fancy manner, and had assured the retail trade, through Dan Brown, of my honesty. I just sold what the trade was tumbling over itself trying to find, and what it paid the highest prices for.

I began by arranging a series of special fruit institute meetings, under the auspices of the Farmers' Institute. The speakers were supplied free of all charges and I saw to it that they dwelt upon the importance of No. 1 stuff, and that they told how to produce it.

During the spring I conducted a system of follow-up work among the growers in their own orchards. I advised and assisted, and inspected the work done.

When in June a local branch of the Ontario Department of Agriculture was established in Albert, I at once made the acquaintance of the young district representative. He was a graduate of the Ontario Agricultural College, and had been sent to assist the farmers in all ways possible. He was a development missionary in spirit and in practice, and he gave me every assistance. Together we covered our territory very thoroughly.

As the packing season drew near, I hired a few competent men from outside points, at my own expense, to act as demonstrators and inspectors. I divided my territory in sections and placed a man in charge of each. He saw that the fruit was properly packed, collected it at convenient shipping points and had it loaded. The Dominion fruit inspectors overhauled the apples on board and very few improperly graded barrels have ever been reported from this association.

This was not because of any Utopia we had established. Our members had been convinced that honesty was straight business, that was all—and I employed excellent inspectors.

"I don't care whether you are honest or not,' said one institute speaker. "You will mark apples according to grade and to size, if you know anything of business. When you sell a consignment containing inferior stuff every barrel is docked, because someone has to lose on those poor apples. In this way a few culls will queer an entire pack. If you feed your No. 3's to the hogs you will be getting nine dollars a barrel for them, considering the increased value of the others."

This talk had its effect, you may be sure. But, of course, it is hard to preach this to one man when his neighbor may be improperly grading his fruit and all the barrels are placed together and their identity lost. Then the crook gets the same price for his culls that the others get for honest stuff. The loss is distributed among so many that the thief imagines he is ahead of the deal.

But we found a remedy for this. On every barrel the grower's name was stencilled, and a record of all sales were kept. Thus we kept tab on each man and if an inferior quality was reported, he bore all the loss and in later years a heavy fine as well.

The market problem did not greatly worry me. I banked on Dan Brown. He had spent his life at the apple game, and knew all about British and Western markets. He had an eye turned toward Chi-

cago too, and has done very well there in late years.

"Well, boy," he said when I approached him, "you've always played fair with me and that's nine-tenths of the battle. If you can get me the goods I can sell them better than any man in Canada. I'll try the game a while anyway."

And Dan was right. I do not know a man who can place his fruit better than he can. Yet his methods are as simple as all truths are. He just gives the buyers what they want—and his word is as good as his bond. Dan has learned that honesty is the only policy that makes for success in the apple game.

So I secured the quality and Dan disposed of it. He paid us a flat rate of $3 a barrel and we pro-rated according to variety and grade. Our No. 1 Spys and similar high-grade apples returned $3.60 per, while the cheap stuff such as Ben Davis and Stark was knocked down to $1.85. It was an object lesson to the growers of what to plant in the future.

My position after this sale was assured, as the old price had been a flat rate on the three of from one dollar to one-dollar-and a-half a barrel regardless of variety. Under our system the cost of barrels and of picking and packing had amounted to less than a dollar per. After that "Jimmy Fruit Jackson" stood for something in our county.

(To Be Continued.)

National Affairs: Three Years of Conservative Government: By John MacCormac

SEPTEMBER 21, 1914, marks the third anniversary of the coming into power of the Government headed by Sir Robert Laird Borden. The administration has now been in office for three years and, when it is considered that the time has been short, it cannot be denied that its legislative record is creditably long. In three years the Government has accomplished the first duty of implementing the promises given to the country before election and it has initiated and carried into effect a long list of progressive measures.

In making this claim, it is necessary to draw attention to certain handicaps, besides that of brevity of time, under which the Government labored. There are two salient reasons why it is not unfair to claim that what has been done has been done under conditions of exceptional difficulty and thus constitutes a far greater measure of success than might be indicated merely by what has been inscribed on the statute books.

Hon. W. T. White, Minister of Finance, and Sir Robert Borden, Prime Minister, photographed while attending a baseball game between the House of Commons and the Press Gallery.

(1) That the three years during which it was accomplished were the first years of constructive work in office after an uninterrupted fifteen-year period in Opposition.

(2) That a Conservative majority in the Commons had to contend against a Liberal majority in the Senate.

Let us consider the first of these factors. The Conservative party took office in 1911 for the first time since

EDITOR'S NOTE.— In the last issue of Farmer's Magazine an article appeared on the younger men of the Liberal party who had come to the front since the last election. The accompanying article deals with the work done by the Conservative Government during the three years it has been in office. Impartiality has been aimed at in the treatment of the subject, but of a necessity matters of a controversial nature enter into any political review. A series of articles on national affairs, of which this is the second, has been arranged for and subjects of Dominion-wide import will be taken up from all standpoints in turn.

Senator Lougheed, leader of the Government in the Senate.

1896. The functions of an Opposition, whatever they should be in an ideal system of party government, are in practice to oppose. Consequently the Conservative party had to abandon criticism for construction. The party had to find itself, take stock of the situation, and formulate a policy which should meet it and yet prove sufficiently comprehensive to meet the years to come. The ship of state must be provided with sails for the favoring breezes and others for the stormy blasts of hard times. It must shake them out and trim them down before it gathers way and moves slowly and majestically out of the harbor on its four years' voyage. And all this, in the natural order of things, takes time, means haste made slowly.

Then the Liberal Senate. Constructive legislation has been introduced into and passed the Commons only to meet defeat in the Upper Chamber.

In considering the record of any party it is the usual practice to see how it measures up with that party's announced policy and its pre-election pledges. Consistency has never been considered in the science of politics to have any claim as an absolutely paramount factor in determining a party's action or the action of an individual within the party since all progress is change. But, too, all decadence is change as well and though consistency carried too far may invite the mold and canker of inertia, a little of it would, no doubt, go a long way toward winning the confidence of a public and keeping it. Party principles should wear well. Let us see, then, how the Conservative party has keep its pledges.

In 1907, Mr. R. L. Borden, then leader of the Opposition, laid down his policy which has since been generally known as the Halifax platform, but in 1911 this was superseded by a manifesto issued during the election campaign which contained a list of pledges as follows:

The Liberal-Conservative party gives its pledge to carry out the following policy if returned to power:

(1) A thorough reorganization of the method by which the public expenditure has been supervised The increase in what is known as ordinary controllable expenditure from $21,500,00 in 1896 to nearly $74,000,000 in 1911 is proof of extravagance beyond any possible defence.

(2) The granting of their natural resources to the prairie provinces.

(3) The construction of the Hudson Bay Railway and its operation by independent commission.

(4) The control and operation by the state of terminal elevators.

(5) The necessary encouragement for establishing and carrying on the chilled meat industry.

(6) The establishment of a permanent tariff commission.

(7) The granting of substantial assistance towards the improvement of our public highways.

(8) The extension of free and rural mail delivery.

(9) The extension of civil service reform.

(10) The granting of liberal assistance to the provinces for the purpose of supplementing and extending the work of agricultural education and the improvement of agriculture.

If these were to be taken up categorically and if there was put opposite each pledge the record of achievement by the Conservative party in three short years it would be found that the list stood thus:

(1) The services of Sir George H. Murray, an eminent member of the British public service, were obtained in order to have an investigation into the conditions prevailing in the civil service of Canada. A report was received from him and as a result not only has a change been made in the whole system of handling public moneys and their audit, but two civil service bills designed to readjust conditions in the service were introduced into Parliament last session and will be passed during the coming session. One establishes a system of superannuation and the other places the whole scheme of civil service salaries and divisions on a new basis.

(2) Manitoba's claims have already been met. A conference of provincial Premiers has been held in further consideration of provincial claims generally and final settlement is delayed only by disagreement between the provinces themselves, the premiers from the maritime provinces having also asked for a readjustment of provincial subsidies.

(3) The construction of the Hudson Bay Railway has been expedited and no effort has been spared to carry the work to completion. It will be finished in the fall of 1915.

(4) A huge terminal elevator has been built at Fort William and three interior storage elevators at Saskatoon, Moose Jaw and Calgary, are either built or under contract.

(6) During the first session of the new Parliament a bill was passed to authorize the establishment of a permanent tariff commission but was defeated in the Senate.

(7) During the first two sessions after 1911 bills were passed by the House of Commons authorizing large Government grants for the encouragement of highway construction, $1,000,000 in 1912; $1,500,000 in 1913, but in each case the bill was defeated by the Senate.

(8) Free rural mail delivery has been widely extended every year.

(10) For the assistance of agricultural education a fund of $10,000,000 has been set aside.

To sum up, every plank of the 1911 platform except one has either been carried out, or is in sight of fulfillment. This in itself the Government might claim to be a fairly successful record, but the short history of the twelfth Parliament has been one of initiation as well as fulfillment. Because of the existence of a politically hostile majority in the Senate important legislation, initiated in the Lower House, failed in the Upper.

Hon. Geo. H. Perley, member of Cabinet without portfolio, and now acting as High Commissioner in London.

In the list of such legislation, the naval bill stands first and was, from the standpoint of the issue involved, perhaps the most important measure with which Parliament had to deal. So much has been said and written on this subject that it scarcely requires definition.

In the summer of 1912 after becoming Prime Minister, Mr. Borden proceeded to Great Britain to consult the British Government and the Admiralty as he had promised to do when in Opposition. On December 5, 1912, he announced his policy, based on a memorandum of the naval situation which the Admiralty had drawn up, Briefly, this memorandum drew attention to the extraordinary increase of the new German navy, examined the situation as it would be in 1915 and 1916 when Great Britain's sea strength would not be so great on the Mediterranean and dangerously weak in overseas stations, and concluded by stating that the most effective aid that Canada could offer "should include the provision of a certain number of the largest and strongest ships of war which science can build or money can supply." Acting on this official information, Sir Robert proposed that Canada should build three large battle cruisers by contributing $35,000,000 for this purpose. This, he emphasized, was not in any sense a permanent policy, but the immediate and effective assistance of which he had repeatedly spoken.

In amendment to this Sir Wilfrid Laurier moved that two fleet units, one on the Atlantic and the other on the Pacific coast, be provided with the sum of $35,000,000 designated and that Canada, without further delay, should enter actively upon a permanent policy of naval defence. There were other amendments but this is the one which crystallizes the whole attitude of the Liberal party on the question.

The outcome of the naval debate is a matter of history. Sir Robert Borden's resolution, after Opposition obstruction had been terminated by the introduction of what is known as the "closure," passed the House of Commons and was then rejected by the Liberal majority in the Senate.

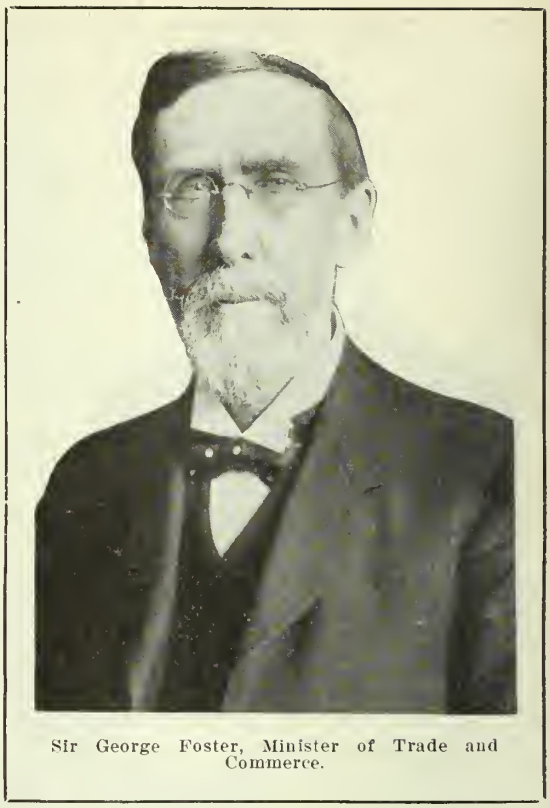
Another measure which met a similar fate during two succeeding years was the highways bill. Sir Robert Borden had in his 1911 manifesto included "the granting of substantial assistance towards the improvement of our public highways." When returned to power he introduced a highways improvement bill in the Commons in 1912 and presented an appropriation of $1,000,000 for this purpose, but the Senate greeted the bill with thumbs down. Again in 1913, the bill was introduced, put through the Commons and again it met short shrift in the Upper Chamber.

The appropriations were to be distributed among the several provinces, chiefly according to population, as were sums of money to be voted in succeeding years by Parliament. Amendments were moved by the Liberal party to make it obligatory in every case that such grants should be distributed on a population basis, and to eliminate a clause which empowered the Minister of Railways himself to undertake highway construction or improvement. The Government, on the other hand, maintained that in specific cases it might be advisable that one province should obtain a larger grant than another to meet conditions which might arise, such as great disasters occuring therein, though the general principle of distribution on a population basis was recognized.

Hon. Dr. Roche, Minister of the Interior.

Still another piece of legislation which met its fate in the Senate was the branch railway bill. This provided for the acquisition of branch lines in Quebec and the maritime provinces for the advantage of the Intercolonial Railway. It is the branch lines of a railroad which tap the resources of the country through which it runs and build up that local traffic which is its very lifehood, and it was with a view of adding these feeders to the I.C.R. that the bill was introduced.

However, in spite of these circumstances, much has been done. A young and growing country like Canada sets some problems for its Governments before they take office. One of these is the problem of transportation and the measure of a Government's success is largely the merit of its transportation policy and the manner in which it is executed.



Sir George Foster, Minister of Trade and Commerce.

The transportation policy of the Borden Government, when viewed in the co-relation of its different parts, is one of impressive magnitude. It is designed to transfer the products of the Canadian farm from the field to the wharf in Great Britain and to bring to the West in turn, the manufactures of the East.

This transportation chain commences with a scheme of interior terminal storage and transfer elevators on the prairies, and with a great Government terminal elevator under construction at Port Arthur; it continues with the completion of the National Transcontinental Railway, which will be finished this year; with the construction of the Hudson Bay Railway; the commencement of the new Welland Canal; the completion of the Trent Canal, so long a pawn in the political game; the deepening of the French River, part of the proposed Georgian Bay waterway; and the deepening of the St. Lawrence channel, for which surveys are now being made and preliminary work done.

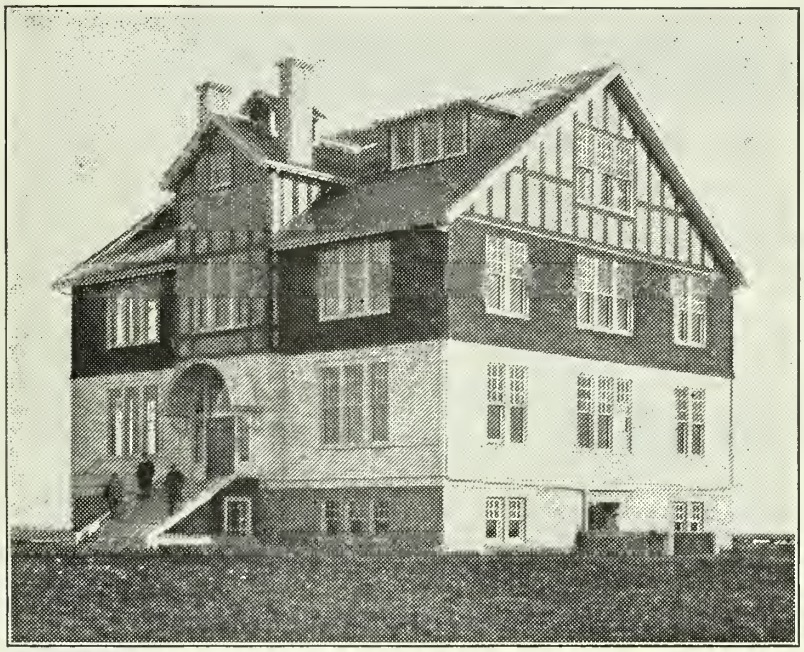
The construction and improvement of these rail and water routes brings us to the coasts and there we find that immense harbor works are being prosecuted with great vigor. Montreal harbor is being transformed at a cost of eighteen millions; great harbor works are under way at Quebec, and a huge drydock under construction at Levis; Halifax and St. John are both being transformed into modern seaports at a cost of millions and there also drydocks are being built. Everything has been done to facilitate the transportation of Canadian products to where the waters of the Atlantic lap the eastern coast and not even here has the Government rested its labors for the work of controlling ocean freight rates has been taken up and is now under investigation.

Continued on Page 56.

Vocational Schools for Children

Live Stock, Gasoline Engines, Domestic Science and Social Color, Broaden the Horizon of Alberta's Young Men and Women

By W. A. CRAICK



Agricultural High School at Olds, Alberta.

A want long felt in rural Canada has been some form of school where the boys and girls past the public school age could obtain additional education in subjects bearing directly on agricultural and country life, and when Agricultural High Schools were erected at Vermilion, Olds and Claresholm, the Alberta farmer did not fail to take advantage of the opportunities for their children. In his direct and entertaining explanation of the course and system followed in one of these schools Mr. Craick makes a strong argument for vocational training for the farm's young men and women.—EDITOR.

INHABITANTS of the little town of Olds, fifty miles or so north of Calgary on the Edmonton branch of the C.P.R., call the three-storey, spick-and-span, yellow-green-and-brown building that rises on the eastern outskirts of the place, the "College." Before it was finished last fall, Olds was quite as insignificant a burg as the average prairie town of a few hundred population. But since the students began to pour in from east, west, north and south and occupy lodgings among the townsfolk, the dignity of the place has been increased a hundredfold and the municipality has taken to patting itself on the back and exclaiming, "Behold I am now a college town."

Olds has very good reason to be proud of itself. It is one of three places in the Province of Alberta where an interesting experiment in agricultural education is being worked out, and worked out successfully. "The College," the building of which has meant so much to the town, represents the first serious attempt in Canada to place the opportunity of obtaining a practical training in elementary agricultural science within the reach of the boys on the farm. At Vermilion in the northern part of the province, at Olds in the central section, and at Claresholm in the southern part, duplicate buildings have been erected, duplicate plants installed and staffs of equal size and efficiency appointed.

On the first of last November the three schools opened their doors for the first time. The Hon. Duncan Marshall, who had fathered the project, and the officials of his department waited with no little anxiety to see how the idea would "take." They had departed radically from the system in vogue elsewhere in Canada. They were embarking on an uncertain enterprise and it remained to be seen whether their faith in the soundness of the principle would be vindicated.

What happened at Olds? Sixty-one husky youths gravitated into the town and found their way by ones and twos and threes to the principal's office at the school. They came from out the Lacombe line, from Ponoka and Red Deer, from Langdon and the south—from all parts of the big central district of the province. They were not children, attending under paternal pressure. They were young men, keen to better themselves and glad of the chance to learn. Sixty-one of them came and the promoters of the school thought they would do well the first year to land half the number!

The scheme was off to a grand start. Indeed, it went so fast that it fairly ran away with the minister and his department. It was the biggest thing that they had ever launched and what happened at Olds was repeated at Vermilion and Claresholm. Accommodation and equipment were taxed at the outset. Class-rooms, that had been fitted with forty-eight seats only, were overflowed. Laboratories that had been prepared for the practical training of forty were quite inadequate for sixty. More than that, lodgings in the town became so scarce that it was with difficulty late comers were provided with rooms and board.

The first serious difficulty that confronted Principal Elliott and his staff when they came to arrange classes was to grade the boys. The plan was to give all a one-year course in elementary work, but there was a considerable diversity in the scholarship of the sixty-one. A few could boast no more extensive primary education than seven months in a public school. On the other hand there were two or three who had high school certificates. Between the two classes were ranged the bulk of the scholars, the average being about two years below the matriculation

In the raising of cattle lies the future prosperity of the farmers of the province.

The girls have a commodious kitchen equipped with the latest appliances.

level. Still what most of the lads lacked in schooling they had made up in practical experience and here they were, strong of body, alert of mind, and keen to learn.

No entrance qualification was demanded; no fee was charged. The advantages of the new high school of agriculture were not to be limited to the sons of the well-to-do farmer, but were to be extended to all who could afford to come to Olds and pay board for five months. Necessarily a small amount of caution money was asked for, since the tools and apparatus handled by the boys are expensive and must be used with care, but this sum is to be refunded at the end of the year, less an amount to cover breakages.

Then the work started. The course was arranged to give the boys the greatest possible amount of practical training. At the same time the need for general education was not overlooked. Classes in mathematics were put on the curriculum, so that the usual computation made in farm work might be readily handled. English was included in order that the boy might be able to write a decent letter. Chemistry and physics were added because of the very important part these subjects play in the everyday life of the farm, chemistry as underlying the nutritive value of foods, physics as teaching the movement of water, the character of soils and the phases of the irrigation problem.

Apart from all this however, the emphasis has been laid on practical work and during each day the boys at the school get a full share of manual labor. Near the main building there has been built a two-storey workshop. The ground floor is devoted to blacksmithing, the upstairs to carpentry. Eighteen anvils and forges are installed in the former and a like number of work-benches, equipped with vise and tools, in the latter. To see the classes at work in this building is a delight to anyone who takes pride in the manual prowess of the rising generation. And the lads themselves are eager to show themselves efficient. Working with blue print plans before them, they are required to make each article prescribed, in exact accordance with the plans.

The articles turned out here are not of fanciful design or intricate execution. They are objects of everyday use on the farm, the idea being that any lad who has had a course at the school would be able to make or repair such articles as he needed, without having to go to town or send for assistance. So the forges blow and the anvils ring and, amid the grime and the smoke, the students in their overalls and aprons shape and bend and weld a great variety of articles.

Then there is the practical work in connection with the breeding of livestock, which is receiving great emphasis at present, since it is recognized that in the raising of cattle lies the future prosperity of the farmers of the province. Work with the end in view of walking everything off the farm on the hoof is the mandate of Principal Elliott, who sees in this policy a mighty advantage for the Alberta farmer. Accordingly, the students are taught how to judge, handle and feed stock, and since the school stands on one of the provincial demonstration farms, there are plenty of animals to bring into the basement room which serves as a stock-judging pavilion. It was this advantage that pointed the way towards the establishment of these high schools of agriculture.

Another useful department of work relates to the use of gasoline engines, both small stationary engines and large tractors. A number of machines have been lent to the school for demonstration purposes and the boys have been taking them apart, putting them together and operating them, until they have become entirely familiar with their management. This forms only a part of the instruction given in the school in connection with farm machinery of all sorts. When they are through with the course, the students will be in a position to overcome any difficulties that may arise in the operation of modern farm implements.

The school building itself has been designed to suit the special needs of the work. In the commodious basement, a large room has been arranged for stock-judging purposes, with a platform along one wall and a door leading outside through which the animals can be brought in. On the opposite side is located a room in which the domestic science girls are taught dairying. The rest of the basement is taken up with locker-rooms, lavatories, heating appliances and caretaker's quarters.

On the main floor, there is a central hall-way leading straight through the building. To the right of the entrance are two small rooms used as offices by the principal and staff and back of them a large class-room and laboratory where experiments and other practical work are carried on. To the left of the entrance is the library and student's rest room and to the rear of it the boys' class-room equipped in similar fashion to the ordinary schoolroom.

The first floor is given over to the domestic science department and is admirably arranged for the purpose. There is a large class-room for lectures, a dining-room for demonstration use, a kitchen and pantry and a commodious cooking school equipped with all the latest appliances. On the second or top floor is a large assembly-room, part of which is at present in use for instruction in sewing. Here the students hold meetings or indulge in dancing.

Visit the Olds School any day in midwinter and a busy scene presents itself. The writer happened along on an afternoon in February, when the temperature was well below the zero mark. Notwithstanding the cold, the building was comfortably warm and a few plants and flowers in some of the rooms seemed to be thriving. All departments were in full operation. Down in the stock-judging room a dozen young fellows were intent on hearing a lecture from an expert horse fancier, who had been brought specially to Olds to take part in the course. Across the hall in the dairy room a class of girls were listening to the words of wisdom uttered by an expert in that department of farm work. Over in the agricultural mechanics building another set of youths in overalls were forging bits of iron into a variety of useful articles under the watchful supervision of the professor of mechanics.

On the domestic science floor one noted unusual activity and was informed that preparations were being made to give the Minister of Agriculture and a party of men, who were attending a convention in Calgary, a luncheon on the following day. This would be entirely arranged and served by the girl students and would thus form a bit of useful practical work.

In all the other rooms of the school—laboratories or classrooms—something was going on One was impressed with the splendid practical utility of the place. There was very little formality about it. Doubtless there was system behind it all, but system did not obtrude itself. Instead one noted a thorough-going, unconventional sort of interest in everything. The students were there to learn and each was absorbing erudition in his or her own way. Individuality seemed to have more chance in the Olds Agricultural School than in most institutions of learning where it is customary to strive to turn out each and every student on a fixed pattern.

Judging by the appearance of the hundred odd students attending the Olds School, in which number about forty girls are included, the school is reaching a fine type of young manhood and womanhood. The boys are one and all a sturdy, sensi-

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A Fortune From Foxes

Prince Edward Islands Newest and Biggest Industry is Attracting Attention the World Over

By WALTER SIMPSON

THE story of the inauguration and development of fur-farming on Prince Edward Island is one of exceeding interest. The discovery that such valuable fur-bearing animals as the black and silver fox could be successfully and profitably bred in captivity, will have far-reaching results. The possibilities of this new business are as yet only beginning to be realized. Taking into account that this industry is as yet only in its infancy, and also, that its pioneers had evertyhing to learn, the success of it has been little short of marvelous; and we feel that it is sure to take a place among the great industries of the future.

The fur-bearing animals recede before the forward march of the homesteader, and in many of their former haunts, are now not known. In twenty odd years this industry has grown away up in the millions from such a small beginning. The first experiments that led to this grand success, were carried on with our native black and silver foxes kept in a shed or other part of the farm buildings. In twenty years this has developed into the modern up-to-date ranch, where conditions are as near as possible to correspond with the fox's natural breeding grounds.

For the first twelve to fifteen years the pioneers, Charles Dalton and Robert Fulton, bred them only for their pelts and kept any secrets of the business—as well as the foxes—to themselves. But a business with such possibilities could not be kept within narrow bounds. The real business started when others could get stock to start new ranches.

Then the inevitable boom, which has resulted in making the offspring of the original wild fox worth as much as $30,000 a pair, in some cases, began; and to-day there are still many going into fur-farming. The promoter is still at work, and companies—capitalized all the way up to a million dollars, are being organized, and there still seems to be lots of money available for investment.

A typical specimen of the Prince Edward Island fortune maker.

This article from a Prince Edward Island writer gives a comprehensive and reliable view of the famous fox industry of that province. The figures show clearly that fur-farming properly carried on is no fad but a solid money-making business. The importance of breeding for quality, the selection of types, and the care of the animals in captivity will interest every farm reader.—EDITOR.

The promoter is probably getting, as usual, a little more than his share, but even with the high capitalization of the companies, the business has good promise of being permanently successful.

The experience which has been gained by the failures as well as by the successes, will be valuable in the future conduct of this industry, about which there is still so much to learn. Confidence in it is as great as ever, and capital is being attracted from all over the civilized world. Many who hitherto stood aloof are now investing, believing in its permanence and profitableness. In going into the fox business now, when it is necessarily getting nearer a pelt basis, everything depends on the quality of the stock the investor has a share in. The fur markets of the world discriminate very closely in the matter of quality. With the prices of silver fox pelts ranging from $200 to about $3,000, the importance of having only breeders of the best strains in the ranches is apparent. During the first years of the fox boom, not much attention was paid to quality, as long as the foxes were black or silver. Now the intelligent investor is looking more to having the quality of fur which tops the London sales at such fabulous prices, and which will be in great demand, while there are multi-millionaires to outbid, one another in having the choicest in the fur line. Coupled with this, investors are looking for proved breeders which have been producing large litters.

The average litter ranges from two to eight. With these two conditions assured —quality and prolificacy—success is assured. Since the organization of the Fox Breeders' Association and the registration of foxes in classes A, B, and C, the investor has pretty good security in getting the quality he seeks for.

Large numbers of black foxes have been and are still being imported from the wilds of the North-west. These are sold at a fraction of the cost that class A can be bought for. This constitutes a danger for the uninformed investor, as these foxes may be and, no doubt are in many cases a first cross between a red and a black and not having selection back of them to fix type and color, are likely to produce many reds or patches. Of course such stock cannot be registered in any class, and the investor who puts his money in them at anything of a high capitalization, is sure to meet with failure. Even at the big price of class A, stock to-day, the investor has ten chances to one to

Conditions are made to correspond closely as possible with the foxes' natural breeding grounds.

win out, that he would have with cheap imported foxes. Quality is everything in foundation stock, and quality in pelts is what will tell, when the inevitable pelt basis is reached.

Numbers of blue foxes from Alentian Islands have been brought here, but as breeders have not been a success. I believe that they have not produced any young up to this year, but there are reports that some of them are now breeding.

The neighboring provinces of New Brunswick and Nova Scotia are also getting pretty well started in fur farming and will no doubt succeed as their soil and climate are very similar to the soil and climate of the Island.

Companies here are now publishing their prospective dividends which will be payable in September and October. A statement of what is proposed may be interesting. Sixteen companies expect to pay from 100 per cent. to 500 per cent., twenty-seven from 50 per cent. to 95 per cent., twelve from 25 per cent. to 40 per cent. and four from 9 per cent. to 22 per cent. These dividends are smaller than last year but the figures will show about the range for this year. Many of last year's companies were recapitalized at a much higher rate, and consequently the dividends are correspondingly less.

To Prince Edward Island, the smallest division of Canada, will always belong the credit of originating this great industry with its limitless possibilities. A business that was discovered and developed mainly by our own farmers, and has attracted the attention of the whole world. In future, the island will not only be referred to as the "Garden of the Gulf," but will also be known as the Original fox farm of the world.

Spanish Gold

By GEO. A. BIRMINGHAM
Illustrated by DUDLEY WARD

The Story of a Search for Treasure on the Coast of Ireland and the Amusing Situations which Arose

SYNOPSIS OF PREVIOUS CHAPTERS

The Rev. J. J. Meldon, curate of Ballymoy, a village on the west coast of Ireland, while visiting his friend, Major Kent, comes across an old pocket-book of the Major's grandfather, in which he finds an account of some treasure, supposed to have been hidden by the Spaniards of one of the vessels of the Spanish Armada, on the Island of Inishgowlan. The Major possesses an excellent yacht, The Spindrift, and they decide to take a trip to the island and search for the treasure, which Meldon is very confident of finding, but of the existence of which the Major is very skeptical. Meldon also owns a yacht, The Aureole, a worthless tub, which he lets to a Mr. Langton, who, with a friend, wishes to take a trip round the coast. On arriving at the island Meldon and the Major find Higginbotham, an old college chum of Meldon's, engaged in surveying the island for the Government, and dividing it up into allotments. He informs them he is prevented from completing his work by the obstinacy of one old man, named Thomas O'Flaherty Pwho is being lowered over the cliff to the entrance of the cave. entirely surrounded by other people's land, but with which he will not part at any price. Meldon, not wishing to divulge the real reason of his visit, tells Higginbotham the Major is a Government mineralogical expert who has been sent to examine and report on the island's mineral resources. Meldon and the Major start to explore the island and discover they are being followed everywhere by an old man, who turns out to be Thomas O'Flaherty Pat, and who declares he cannot understand a word of English. Meldon tells him they are naturalists looking for sea beetles, and manages to get rid of him; continuing their search, they find an inlet with a hole, which is only visible at low tide, and here Meldon decides the hidden treasures must lie. On returning to the yacht they notice the arrival in the harbor of the Aureole. The following day Meldon starts for the inlet and the cave, and on his arrival discovers a man, who is being towered over the cliff to the entrance of the cave. This turns out to be a Sir Giles Buckley, the friend who is with Langton, on the Aureole, and a son of a neighbor of the Major's, who had lately died. Sir Giles would also have heard of the treasure, as his grandfather was a friend of the Major's grandfather, and had visited the island with him. After some discussion, Sir Giles calls out to Langton to haul him up, and both he and Meldon depart, as the tide has nearly covered the hole in the rocks. The following day, Meldon, having set adrift Sir Giles' boat to prevent his leaving the yacht, again visits the cave with the Major. They make their way through a long underground passage and eventually find two old iron boxes which, however, are empty. At this point Langton and Sir Giles appear on the scene through a hole in the top of the cavern which it seems is just under Thomas O'Flaherty Pat's plot of land. Disappointed, they all return to the yachts, and find that the Government yacht has arrived in the harbor with Mr. Willoughby, the Chief Secretary, on board. Willoughby lands to visit Higginbotham, and Meldon follows. Higginbotham in vain tries to dissuade Meldon from seeing Willoughby, who is much incensed at Meldon's tale of the geological survey, but Meldon insists, and we here find him in the midst of a conversation with Willoughby, who is beginning to be amused at his good-humored nonsense. Afterwards Thomas O'Flaherty Pat approaches Meldon secretly and tells him that he has found the treasure and, being afraid of the neighbors and Sir Giles, he wants the clergyman to take charge of it for him. He takes Meldon that night to his house and shows him the treasure hidden under the stones of the hearth. They have been followed by Sir Giles and Langton, who attack them in the dark and, overpowering them, tie up both O'Flaherty and Meldon. The latter is left alone and manages to roll into the next field.

CHAPTER XVIII.—*Continued.*

"THERE'S a power. Glory be to God, there's a mighty deal of it! More, maybe, than ever you saw in one place together in all your life."

"Come on, then," said Meldon. "Let me set eyes on it. I dare say you guessed —I always said you weren't such a fool as you tried to make out to Higginbotham—I dare say you guessed that the Major and I were after that treasure ourselves."

"I did."

"I thought you did. And the gentlemen from the other yacht were after it too. You guessed that, I suppose?"

"Didn't I see them going down the Poll-na-phuca? What else would the likes of them be after in such a place?"

"Well, I'll say this. If I wasn't to get it myself, I'd sooner you had it than another. I hope you'll make a good use of it and not be wasting it on drink and foolishness. Give Mary Kate a good fortune when the time comes and marry her to a decent man."

"Sure, what's the use of talking?" said the old man in a tone of despair. "It'll be took from me along with the house. The Board will take it and never a penny will the little lady be the better of it, no more than myself or any other one."

"Maybe they won't get taking it," said Meldon, "though indeed for all the good you're getting out of it at present they might as well. I don't see that it's any use to you if you don't so much as buy yourself a decent suit of clothes and spend sixpence on getting your hair cut. It's a shame for a rich man like you to be going about the way you are."

"What good would grand clothes be to the likes of me?"

"I'm beginning to understand things a bit," said Meldon, whose thoughts had passed away from the use to be made of the money. "I see the reason now why you wouldn't give up the house and land to Higginbotham. You're certain-

ly no fool. That dodge of yours, pretending you couldn't speak a word of any language except Irish was uncommonly nippy. I doubt if I could have hit on anything better myself, and I've had some experience in disguises. Only for the priest you might have kept them all at bay. I don't see what they could have done to you, even if they took to asking questions in Parliament."

"What was the good? They have it taken off me now at the latter end."

"They have the house and land," said Meldon. There's no doubt of that. But I wouldn't say they have the treasure yet. You came to the right man when you came to me. If that treasure can be saved, I'll save it. What would you say now if we carried it down to-night to Mrs. O'Flaherty's, Michael Pat's mother, and hid it under the old woman's bed?"

"I wouldn't trust her. She'd steal it on me."

"I don't believe she would. Not if you gave her a bit for herself and bought a silver mug or something for Michael Pat. But if you don't like the notion of her, what about Mary Kate's mother? She's your own daughter."

But Father Mulcrone clung to the railing.

"She'd steal it on me as quick as another."

"Would she, then? I declare to goodness you have a pretty low opinion of your relatives and friends. I don't believe they'd touch a penny of it. Have you any plan in your own head?"

"Let you be coming up and taking a look at it."

"I will, of course; I'm most anxious to see it. But tell me what it is you think of doing with it?"

"I thought maybe——" the old man paused and laid his hand on Meldon's arm.

"Well?"

"I thought maybe you and the other gentleman would take it with you in the yacht and put it in the savings bank beyond in the big town."

"That beats all," said Meldon. "And what would hinder us from making off with it and never coming next or nigh you again?"

"You wouldn't do the like."

"Well, as a matter of fact I wouldn't. No more would the Major. But how do you know that? It's a queer thing that a man who wouldn't trust his own daughter, and her living under his very eye, would hand over a lot of money like that to two strangers."

"Sure, I could see by the face of you the minute you first set foot on the pier that you were as simple and innocent and harmless as could be. Anybody could tell by the talk of you that you couldn't get the better of a child, let alone a grown man like myself, begging your honor's pardon for thinking that ever you'd want to do the like."

"You're quite wrong about that," said Meldon, irritated by this compliment to his integrity, "and if you dare to say such a thing again I'll not help you with your treasure. Mind what I say. Another word of that sort out of your head and I'll go straight down to Higginbotham and tell him what you've got."

"Let you be coming along now," said Thomas O'Flaherty in an indulgent tone, "and don't be wasting the night talking. Walk easy. It's a rough way from this on to my houseen, and there's stones on it would break the legs of a bullock, let alone yours or mine."

CHAPTER XIX.

THEY reached the cabin. Old O'Flaherty fumbled at the latch and opened the door. Inside, the place was almost quite dark. A few sparks glowed faintly on the hearth. The small square window looked like a grey patch on the black wall. Meldon paused at the threshold unwilling to advance without light towards unknown furniture, over a pitted and hilly earthen floor. O'Flaherty disappeared into a corner and could be heard breaking sticks. The fragments were flung on the hearth. The old man went down on his knees and below the embers.

"I have the end of a candle on the dresser beyond," he said, "if I could come by as much fire as would light it."

"If that's what you're after," said Meldon, "I have a box of matches in my pocket."

He drew out the box and struck one. O'Flaherty pounced on his candle, lit it, and set it on the stone seat which filled an agle of the wide hearth.

"Let you give me a hand now, and we'll shift the dresser," hesaid. "I could do it myself, but it'll be done quicker if you take the near end of it."

Meldon caught hold of the dresser and pulled it over to the far side of the room. O'Flaherty stood on a wooden stool and took down a shovel which rested among the rafters of the roof. He scooped away loose earth from the place where the dresser had stood. At a depth of about an inch he came upon a number of boards laid close together. He prized up one of them with the edge of the shovel and lifted the others out. A hole lay open. Meldon peered into it, but could see nothing. He fumbled for his matches. O'Flaherty fetched the candle from the stone seat in the hearth. He lay flat and, stretching his hand into the hole, held the candle down. Meldon saw piles of coins standing in neat rows. He, too, lay down on the floor, reached into the hole, and, touching them with his fingers, counted the piles. There were ninety-eight of them. He lifted one and counted the coins in it. There were twenty.

"Hold the candle here," he said.

Thomas O'Flaherty, rising to his knees, set the candle on the floor at the edge of the hole.

"They're all gold, every single one of them," said Meldon. "If those were no more than just ordinary sovereigns you'd have pretty near two thousand pounds. But by the weight of them I'd say that they're worth two or three sovereigns each. You're a rich man, Thomas O'Fla-

herty Pat. There may be richer men in the Province of Connacht, but I don't believe there's one with the same command of ready cash. I declare to goodness if it wasn't for Gladys Muriel, I'd wait a few years on the chance of getting Mary Kate. How ever did you get all that money up out of the cave?"

"I did have a bit of rope fixed to a big stone the way it wouldn't shift on me and me going up and down. The lids of the iron boxes gave me my 'nough of work before I got them lifted, and them rusty with the damp there was in it. But, with the help of God, I got them lifted at the latter end. Then I'd be putting the gold into a bit of a bag that I had on me. It was very little I could take at the one time, for it would surprise you how heavy it is, and me having to climb the rope and not one at the top to give me a hand. Maybe it wouldn't be more than once in the day and often not that much itself that I'd go down. I did be in dread that some of the boys would discover what I was after. From first to last I wasn't less than a whole year at the job."

"You would be all that," said Meldon. "It's a mortal pity I wasn't here at the time. We'd have rigged up some sort of pulley at the top of the hole, and with me filling at the bottom and you taking the stuff at the top we'd have had it out in a single day. But there's no use talking about that now. The gold's here, right enough, however you got it."

Meldon turned the coins over and over in his hand, held one to the light and then another, felt the weight of them singly and then two or three at a time.

"What put you on to it?" he said. "What made you think of looking in that hole?"

"Sure the people always had it that there was a deal of gold on the island somewhere. My father knew it and his father before him, and everybody had heard tell of it. Long ago they did be searching for it. There was two of the gentry once came to look after it. But people got tired, finding nothing, and at the latter end they gave it up. It's maybe a hundred years since anybody laid down his mind to look for it. But there was one place that I knew nobody ever searched, and that was the Poll-na-phuca."

"Why not?"

"They'd be in dread on account of them that do be in it."

"Them that — oh, the fairies, of course!"

"Well, I used to be turning it over and over in my mind and me no more than a gossure. And I said to myself that seeing the gold was somewhere and that there was just one place that nobody would be caring to look for it, it was there it must surely be. It came into my mind, too, that the like of them that hid it first wouldn't be in dread of who might be in the hole or who might not. I've heard them say that the gentry doesn't give much heed to them tales. Indeed, they might choose out the Poll-na-phuca just by reason of there being many another that wouldn't go next or nigh it."

"That was a fine piece of deductive reasoning," said Meldon. "I couldn't have argued the thing out better myself. I say, Tom, you won't mind my calling you Tom, will you? I'll say Pat if you like, but your whole name is too long for frequent use—the wind's rising. Did you hear that last gust? It's going to be a nasty night."

"It was long enough," said old O'Flaherty, shading the candle from the draught, "before I could get my mind laid down to go into the Poll-na-phuca. I'd be saying to myself in the daytime that I'd go and thinking maybe I'd better not when it was dark. Or it would be the storms in the winter and the noises there'd be coming out of it would make me think it would be wiser to leave that sort of people to themselves and not be meddling with them. But in the latter end, when I was getting used to living near it and no harm coming to me, I went down."

"And did ever you come across a leprachaun or anything of that sort? Tell me the truth now."

"I might, then. Believe you me there's queer things that nobody, not the clergy themselves, knows about, down in the depths of the bowels of the earth where the sun doesn't be shining. There's queer things there."

"Higginbotham says there's pliocene clay."

"There might. I wouldn't say but there is. The likes of him would surely know. But there's more."

"I wouldn't wonder," said Meldon. "I didn't come across anything of the sort myself; but then I was only there once, and besides, I'm not the sort of man that a fairy would come near. But we can't afford to spend the night in gossiping. Are you still bent on my taking the gold away with me in the yacht?"

"I am."

"It'll take the best part of the night to get it on board. For one thing I'm bound to waken Major Kent the first trip and then I'll have to give him some sort of an explanation of what I'm doing. You don't know the Major and so you can hardly realize the length of time it takes to explain anything to him. He'll want to argue, and he's always in a bad temper when you first wake him. The morning will hardly see us through the job. Luckily the only person with any sort of right to interfere is Higginbotham. He's frightfully officious, and you never can tell what his Board might regard as coming under the head of mining rights. But it's easy to put Higginbotham off the scent. Do you happen to have that bag anywhere about, the one you used to take down into the cave?"

O'Flaherty rose, climbed on his stool again, and grubbed among some dirty sails and nets which hung on a beam above the hearth. He descended with an ancient flour sack in his hand.

"That's not such a small bag as you led me to believe," said Meldon. "I wouldn't care to go off in our punt with that bag full of gold. You may have noticed that ours is one of those patent collapsible punts, and you have to be uncommonly careful what you take in them. The best thing we can do is put a few hundred of your doubloons in the bottom of the sack, ferry them off, and then come back for more. My goodness, listen to that! There must be half a gale of wind blowing this minute and that won't make the job of navigating the Major's beastly hat of a punt any easier. Still, if nothing else will do you except to get the stuff on to the Spindrift, we'll—— Hallo! what on earth are you doing with the candle?"

Old O'Flaherty rose suddenly to his knees as Meldon spoke, held the light aloft, gave an inarticulate cry, and then dropped the candle. As he did so Meldon was struck on the head from behind and rolled over senseless on the floor.

"Ive settled the curate," said Sir Giles Buckley. "Have you got a hold of the old man?"

Euseby Langton had not got hold of O'Flaherty. His nerve had failed him at the moment of assault and he stood helpless in the door. Thomas O'Flaherty realized his position at once. He rose from his knees and began to move silently through the hut. It was quite dark.

"No," said Langton. "I—I missed him."

"Damn it!" said Sir Giles; we must get him or he'll raise hell all over the island. I can't see a stim."

O'Flaherty guessed from the sound of his voice that Langton was in the door and that his way of escape was barred. He moved through the hut in the hope that Langton might be tempted to pursue him. Sir Giles felt after him in the dark; but the place, familiar to O'Flaherty, was strange to him.

"Stay in the door, Langton," he cried. "Don't let him pass you."

He struck a match and caught sight of O'Flaherty standing a few yards in front of him. But the old man was ready for the manoeuvre and had his wits about him. He struck at the match with his hand and extinguished it. Sir Giles made an effort to grapple him, failed, and dropped his match-box. O'Flaherty moved away from him, felt the shovel with his feet, stooped and picked it up.

"Strike a match, Langton," said Sir Giles.

The moment the first sparkle of light shone O'Flaherty struck at Sir Giles with the shovel. He brought the flat of the blade down on the arm which Sir Giles stretched out to guard his head. Then, with a call to Langton for help, Sir Giles flung himself on the old man. O'Flaherty was feeble, but he fought desperately. Sir Giles' right arm was numbed from the blow of the shovel. He called again for help. Langton seized O'Flaherty round the neck and pulled him backwards. Between them they overpowered the old man and laid him on the floor. They had come well provided with what they were likely to want. Ropes were produced. O'Flaherty was securely bound and gagged. Sir Giles drew a candle from his pocket and lit it.

"Now for the curate," he said. "I've knocked the senses out of him anyway.

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Real Neighboring

The Pioneers May Have Needed Each Other More, But Country Life Will Never Be So Organized That We Can Live Without Neighbors

By ETHEL M. CHAPMAN

THERE was a woman who believed neighboring had gone out of fashion. Neighbors didn't seem to need each other now as they did twenty years ago, when with a limited equipment of machinery they had to make "bees" to saw the firewood or stone a field. Now they didn't exchange work, and so far as she could see they didn't exchange anything else. Why whenever her father killed a beef or a pig or a lamb, he sent cuts of fresh meat to half a dozen families around, getting it back when their killing time came. If anyone made a barrel of sauerkraut you could smell it frying in every kitchen in the township for a week after. If a man's cattle got into his crop, the first person driving along the road tied his horse to the fence and put them out. Now, she supposed, they would wait and notify the owner over the telephone. The spirit of neighboring was dying out.

And if the men were missing it, the women on the farms must feel it a great deal more. The men got together in co-operative societies and political meetings and while they did the roadwork; but their wives didn't have "quiltings" or rag bees any more; they did their visiting over the telephone and altogether saw very little of each other. The isolation of farm women was no dream.

Then the woman who thought the spirit of neighboring had died out, went to visit a woman who knew it hadn't—in her neighborhood.

It was one of those fall mornings when there are long cool shadows in the hollows of stubble fields, and the hum of threshing machines in the air—a time which farmer's wives sometimes associate with endless cooking and pots and pans and soiled table cloths; but the woman who believed in neighboring was making preparation for threshing day and seemed happy over it. It didn't mean just a necessary evil, the feeding of so many "hands." "It's the one time of the year that we are sure of having all our near neighbors in to dinner," she explained. "Most of them don't keep help, so they have to come themselves, and it's a sort of company day." And she seemed to take considerable pleasure in putting the best of her culinary skill into rows of pumpkin pies, and apple pies, and piles of puffy biscuits; in making a crock of apple sauce and boiling a sugared ham for supper. "Just like we did for the logging bees," thought the woman who believed people didn't care for their neighbors any more.

Occasionally we hear a lament for the dearth of neighborliness in farming communities, and a derision of the modern systems and inventions which make neighboring less necessary than in the days of the early settlers. The need of neighbors, especially among the women of rural Canada is as great to-day as it ever was, and the more complex social life gives scope for even a bigger, truer, spirit of neighboring than in the times of the pioneer.—Editor.

But, of course, threshing day was unavoidable, she reasoned. A woman did well to make the best of it, but that didn't stand for going any second mile in the interest of the neighbors. When the country was new the spirit of helpfulness extended away beyond the limits of personal obligations. When there was sickness in a home all the older women put on their white aprons and went right in, spelling each other at nursing the patients till they recovered, or died. Now a trained nurse would be hired to do that.

Of course there were women in the neighborhood who were hard to bring out. They had stayed at home until a shy, backwardness kept them there.

Then the family down the road took typhoid fever. They did not depend on the care of neighbor women coming on in shifts, and in many cases ignorant of the proper treatment of the disease. A trained nurse was there sure enough with square-shouldered capability, and unquestionable authority, but there was real neighboring, too, of the most helpful kind. Every day some one would drop in, survey the kitchen to see what was to be done, and do it. When the apple packers came, some woman went in every day to do the baking. They just fell in line where they could do the most good.

To another home, where several lively children kept up a racket all day, there came an illness demanding perfect quiet. The neighbors didn't crowd in to see the patient. They just called to take the children home with them, and kept them until the danger had passed. However, good the advantages of modern professional help, the social organization in country districts will never be such that we can do without neighbors.

In this neighborhood where people believed in neighboring, almost every woman belonged to the Women's Institute. Perhaps that was partly responsible for the spirit. Anyway neighbors who had been strangers before became close friends and exchanged recipes and visits and pictures of the baby until they forgot all about the differences in their ancestors or creeds, or the size of their houses or bank accounts. There were women in the community, of course, who were hard to get at, because they were not understood. The members tried every means of straightforward tact to reach them. The mother who had closed her heart to the world since the day her boy was drowned, was made to feel that other bereaved mothers needed her sympathy and help. The one who hestitated because her home was poorer than the others was taught at the first meeting that the money value of house-furniture doesn't count for much in making a home. Those who had stayed at home until a shy-backwardness kept them there, found members calling for them on meeting days until they were obliged to go, and they felt so much at home that they went of their own accord afterwards.

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On the Fighting Line in

By REV. R. G. MacBETH, B.A.

Author of "The Making of Canadian West," etc. and formerly Lieutenant No. One Company, Winnipeg Light Infantry

Chief Poundmaker, who held Battleford in siege until the arrival of Otter's troops.

EDITOR'S NOTE.—This series of articles on the North-West Rebellion is attracting a wide degree of interest. The author, through his actual participation in the campaign and his close personal acquaintance with the leading personages in the struggle, is in a unique position to present the facts with accuracy and from a broad viewpoint. The uprising under that picturesque firebrand, Louis Riel, marked a distinct stage in Canadian history; and on its suppression the process of weld-

THE news of the battle of Duck Lake ringing throughout Canada put an end to all uncertainty as to Riel's purpose and awakened in all the provinces a stern resolve to suppress his seditious movement with the utmost speed and thoroughness. In a famous passage of his descriptive poem, "The Lady of the Lake," Sir Walter Scott gives in his own inimitable way an account of the impending conflict between the Highland chieftain and his Saxon foeman. He tells how the Saxon not knowing who it was that was giving him conduct to Coulantogle Ford had expressed an ardent wish to meet Roderick Dhu and his warrior band. And the Highlander, granting his wish, "whistled shrill" to his concealed clansmen;

"And every tuft of broom gave life
To plaided warrior armed for strife."

Duck Lake had that kind of effect on the Dominion of Canada. From the frowning fortress of Old Quebec and the harbor of Halifax down by the sea up through the rich farming districts and populous cities of Ontario, on out to the scattered ranches at the foothills of the Rocky Mountains, hosts of armed, determined men sprang up in volunteer bands to resent the insult to their flag and to express their horror at the killing of their fellow citizens out on the snowy Saskatchewan plains. The uniform of good Queen Victoria had been fired upon and her soldiers slain, and what Edmund Burke vainly hoped for another Queen was always true in regard to our peerless sovereign, that ten thousand swords were ready to leap from their scabbards to avenge even a look that threatened her.

And then, following hard after the Duck Lake fight and, as the outcome of it, Big Bear and his braves on the splendid Reserve of Frog Lake near Fort Pitt rose, intoxicated by the news of Riel's success, and murdered in cold-blooded massacre nine men, amongst whom were two priests who tried in vain to protect the others. Fort Pitt was a well known Hudson's Bay post where Chief Factor MacLean (now in Winnipeg) was in charge for the company, and where Inspector Dickens, a son of the great novelist, was in command of a small force of Mounted Police. When the news of Duck Lake reached Fort Pitt, Dickens, seeing that they were in danger, urged the whites at Frog Lake to come into the fort. But the Indian agent thought he could control the Indians. He was the first man they shot.

This Frog Lake massacre, we say, was the first outcome of the battle at Duck Lake, for immediately after the battle Riel began to send runners out more systematically to stir up the Indians. He wrote letters with his own hand to Chief Poundmaker near Battleford and others. Here is one of his epistles found in Poundmaker's camp:

"Praise God for the success he has given us. Capture all the police you possibly can. Preserve their arms. Take Fort Battleford but save the provisions, munitions and arms. Send a detachment to us of at least a hundred men.'

In another letter he says: "Dear relatives and friends,—We advise you to pay attention. Be ready for anything. Take the Indians with you. Gather them from every side. Take all the ammunition you can, whatever storehouses it may be in. Murmur, growl and threaten. Stir up the Indians. Render the police at Fort Pitt and Battleford powerless."

He took advantage of the ignorance and superstition of the Indians, too, by saying that an eclipse of the sun which was soon to take place was a sign from Heaven that they were to rise and assist him.

One of the main elements that frustrated Riel's efforts with the Indians was

A fragment of an old photograph rescued from the fire after the Frog Lake massacre. It is now in the possession of (Chief Factor) MacLean, who supplies the following description: "Inspector Dickens (a son of Charles Dickens, whom he resembled), is standing on the left alongside of the late Indian Agent Quinn, who was the first man shot of the nine that were massacred at Frog Lake. Only a part of Quinn is to be seen in the picture. The one standing in the middle is the late James Keith Simpson, the clerk I had in charge at Frog Lake, and who acted as my able and faithful interpreter during our captivity and imprisonment with the Indians for 63 days. The one party seen on the right of the picture is that of the late Stanley Simpson, who was drowned on the Nelson River below Norway House in his effort to save his master, Chief Factor Horace Belanger.

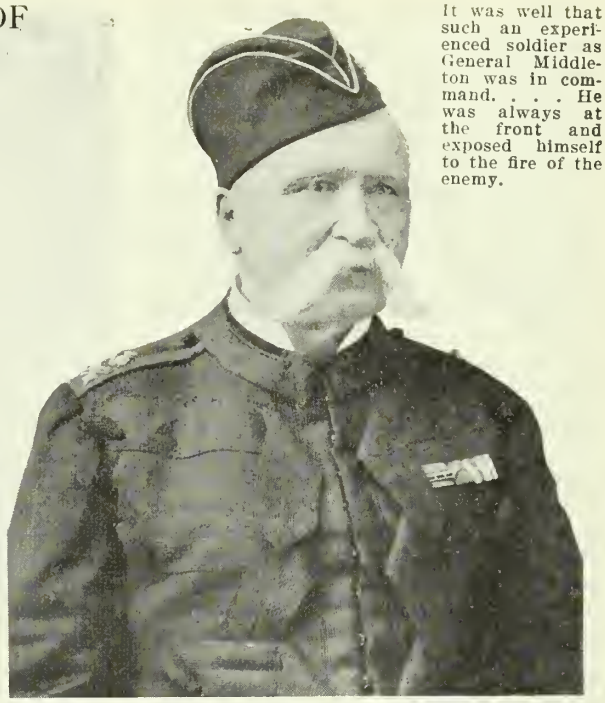
W. J. (Big Bear) MacLean, from a photograph taken in 1910.

Tom Howrie, who captured Riel after the battle of Batoche.

Riel's Day: 3—THE SEQUEL OF DUCK'S LAKE

Illustrated by Old Photographs and Views

ing all parts of the Dominion into a strong and united nation began. The stirring events of '85, therefore, marked a turning point in history, and the men who answered the call of duty and fought for the unity of the Dominion rendered a service the magnitude of which was perhaps not realized at the time. In putting his recollections of the spirited war on the Western plains into printed form, Mr. MacBeth is doing a work of great historical importance.



It was well that such an experienced soldier as General Middleton was in command. . . . He was always at the front and exposed himself to the fire of the enemy.

the missionary, and Canada has never yet realized the debt we owe to the missionaries of the churches in the West at that critical period. But for the presence and commanding influence of John McKay of the Mistawasis Reserve near Duck Lake, who kept that big chief and others near Prince Albert quiet, of Father Lacombe, who influenced the great tribes of Blackfeet and Bloods of Southern Alberta, and John McDougall, who exercised restraint over the Stoney Indians of the foothill country, and others, a very different story would have to be told. For the first sequel of Duck Lake was the Frog Lake massacre, and this was only a sample of what might have happened in many places.

Meanwhile the Canadian forces were being rushed to the scenes of the unexpected outbreak. It was well that such an experienced soldier as General Middleton was in command in Canada at the time. He had seen service in many places, notably in the Indian Mutiny where he was recommended for the Victoria Cross for special acts of bravery, though, on account of his being on the personal staff, Lord Clyde decided that he was not eligible. He was well up in years in 1885, having been in service since 1842, but he never spared himself through the North-West Campaign. He was always at the front and perhaps because he wished to keep inexperienced soldiers from anything like "stage-fright" he exposed himself to the fire of the enemy with the utmost disregard to his own safety. He used to go up to where his advance sharpshooters were under cover and coolly reconnoiter with his field glasses close to the enemy.

Col. Grassett (now Chief of Police of Toronto), who took a prominent and courageous part. (From a photograph taken in 1885.)

One day, when his fur-cap was shot off his head, he picked it up and said laughingly that someone seemed to be firing at him. His chief of staff was that brilliant young soldier, Lord Melgund, afterwards Earl of Minto. He was a great favorite on the field though few of the men realized that the handsome and dashing chief of staff was later on to become a statesmanlike Governor-General of Canada and rise also to the requirements of India during a critical time. With Middleton also were aides Wise, Freer and Doucet, capital men, two of whom were wounded during the campaign.

Middleton reached Winnipeg just after Duck Lake and left the same evening for the front with the 90th Regiment of Winnipeg. This was a rifle regiment which did gallant work in the campaign. Its commander was Colonel McKeand, whose health prevented him taking the part he would otherwise have taken, but whose soldierly qualities were unmistakable. Major Boswell, too, was a capable officer and the other major was Buchan—"Fighting Larry" as he was called—who did good work in '85 and in the Boer War in later years.

The captain of one of the companies was Hugh John MacDonald (now Sir Hugh, the able and popular police magistrate at Winnipeg). He had served under Wolseley and was a prime favorite in war as he always has been in peace.

The Winnipeg Field Battery went out and did excellent service. One of the battery officers was Capt. George Young, already referred to, the son of Rev. George Young, who had pleaded so hard with Riel in 1870 to save the life of Scott. Besides these bodies there were two regiments raised specially for the campaign in Winnipeg and Manitoba, the 91st Winnipeg Light Infantry under Col. Osborne Smith, a thorough soldier, and the 92nd under Col. Thos. Scott, who had served under Wolseley also. It was in the 91st I served, and perhaps our most picturesque figure was Sergeant-Major Lawlor, who had been nursed by Florence Nightingale, when wounded in the Crimea, and whose broad breast was decorated with medals for the Crimean, Chinese, and other wars. Our adjutant was Constantine, who later went into the Yukon with the first contingent of Mounted Police to keep order in that seething camp. These Western regiments being on the ground were, of course, the first to go with Middleton.

REINFORCEMENTS FROM THE EAST.

But up across the bleak north shores of Lake Superior were hurrying the gallant men from Ontario, Quebec and the Maritime Provinces. The Canadian Pacific Railway was not yet finished. There were

great gaps where the rails were not laid and the task of crossing these in the wintry March weather was nothing short of terrific. It was the hardest work of the campaign, this, of marching through snow and slush with heavy accoutrements and then riding, wet and wearied, on freezing flat cars. Scores of men never recovered from this exposure and the heavy mortality of the few years succeeding the rebellion had its origin here and in the hardships to which the Western men were exposed at the same time on the prairie to the setting sun. Yet it is to be recorded to the credit of our men that there was never any mutinous spirit manifested. Everybody tried to do his duty.

In this connection I quote a typical case from General Strange's autobiography, "Gunner Jingo's Jubilee," of which he sent me an author's copy on publication. It speaks of our camp near the Beaver River and says: "But my infantry were dead beat from marching through rain and awful mud. The 65th (of Montreal) had tramped the soles off their boots — some were literally barefoot, others with muddy, blood-stained rags tied around their feet. An officer told me the men could march no more and wanted to know when they would be allowed to go home. I thanked the officer outwardly and rode up at once to the battalion. They certainly presented a pitiable spectacle in their tattered uniforms. The misery of their march through swamp and forest had been added to by the mosquitos and horseflies which were almost unbearable. Addressing the battalion in French, as was my habit, I said: "Mes enfants votre commandant m'a dit que vous demandez, quand vous pourriez retourner chez vous. Mais je n'ai qu'une reponse c'est celle-la de votre ancien chanson "Malbrook s'en va-t-en guerre on ne sait quand il reviendra."*

It had the desired effect and the weary little French-Canadians shouted: "Hurra pour le general; en avant tonjours en avant."** And they stepped out to the refrain of their ancestors. I knew the 65th well, because they were brigaded with us all through the campaign and this is an actual scene. And I saw officers and men in all the regiments when we came together after it was all over who had exercised every invention to keep shoes and uniforms hanging together. So that begininng with the exposure on the railway "gaps" on the north shore and on the close of the campaign there were hardships enough apart from the fighting to prove that Canadians were made of the best kind of stuff.

PLANS WERE CHANGED.

At the outset Middleton's plan seems to have been for two main columns, one under himself to march towards Riel's camp and the other under Strange from Calgary, north to Edmonton and the Big Bear country with the expectation that

*"My children, your commander tells me you are asking when you can return to your homes. I have only one answer to give you. It is that of your old song, 'Malbrook goes away to the war, no one knows when he will return.'"

**"Hurrah for the General. Forward, ever Forward."

His chief of staff was that brilliant young soldier, Lord Melgund, afterward Earl of Minto.

these two columns would meet ultimately in the Battleford region after they had completed their work elsewhere. But the fear of an outbreak at Battleford, where Poundmaker's braves were committing depredations which drove all the people into the fort, caused a modification. And so there were three main lines of attack instead of two, Col. Otter's brigade marching from Swift Current on the line of the C.P.R. to Battleford, and the other two as already indicated. We shall follow with each in turn.

With Middleton were the 90th of Winnipeg, the Toronto Grenadiers, the Midland battalion, A. Battery, Winnipeg Battery, Boulton's Scouts, French's Scouts, and later on Dennis' Surveyors Corps; or about 720 men in all. But we must not forget to mention an arm of the service which was distinct, Capt. Howard, of the U.S. militia, who was there with his Gatling gun. "Gat" Howard, as he was affectionately called, was a prime favorite and did splendid service with his lightning-fire repeater, striking terror

Colonel Williams, who was prominent at Batoche.

into the Indians and on one occasion saving a battery gun from capture by the enemy, Howard, wheeling his Gatling gun up in the nick of time and starting a hail of bullets that swept the redskins back into the ravine. Howard, it will be remembered, went to the Boer War with our men and was killed there.

THE BATTLE OF FISH CREEK.

Middleton, on the way to Batoche, was attacked by the enemy at Fish Creek where a sudden fire from concealed marksmen emptied several saddles in Boulton's Scout Corps, who were riding in advance with the general. The main body of our men came up quickly and there was a hot engagement which may reasonably be described as a drawn battle, though Middleton held his ground with some regrettable losses in killed and wounded. Fighting at a great disadvantage where the enemy knew the ground and had the shelter of ravine and rifle pits, our soldiers behaved with the greatest coolness and gallantry. The enemy retired to Batoche for their final stand and Middleton pressed on.

There was desultory skirmishing for a few days with retiring to the camp at night, and every evening as they retired the enemy followed, having the advantage of the sunset light which prevented our men seeing them in the face of it. One evening a fellow-student of mine, Dick Hardisty, who had returned from the Gordon relief expedition up the Nile just in time to catch the train at Winnipeg and go west with the 90th, was shot in the forehead and killed as he was swinging round to face the enemy.

The men were getting impatient at this sort of thing but Middleton had already lost heavily and all along he said that he was more anxious to save the citizen soldiers who had homes and families to provide for than he would have been with regulars whose business was war. He, doubtless, felt that a rush on Batoche might lead to a heavier loss of life than a game of siege but some of the men, like Colonel Williams and others, practically made up their minds that they were going to make the rush at the first opportunity. And so they did, Middleton not being present when the rush started. But on hearing the cheer he mounted his horse and, rallying the whole line, was in at the death.

Gabriel Dumont, experienced plainsman that he was, escaped and crossed the boundary line for a few months whence he returned and settled unmolested on his farm where he died about eight years ago.

THE CAPTURE OF RIEL.

Riel was found in a clump of bushes not far away by a native scout, Tom Hourie, son of the famous old interpreter, Peter Hourie. The rebel chief was taken to Middleton's tent whence he was sent under escort to Regina jail. I saw Tom Hourie about two weeks later, out north of Edmonton. He was a giant in stature and doubtless was pleased with the attention paid him for his finding the rebel

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A Review of Farm Literature

The Best Things Taken From the World's Leading Farm and Scientific Journals and Condensed Here For Our Busy Readers.

Building Soil With Silage

We Cannot Afford to Grow a Bumper Crop and Allow 40 per cent. of It to Waste

From an article by J. Kelly Wright, in The Breeder's Gazette.

NATIONS do not rise or fall upon the mightiness of their armies and navies, but upon their agriculture and their affections. Our national existence depends upon the fertility of our soil and the quality of our citizenship. Already we can see in America traces of soil depletion, and as a result a lack of love for the soil and open country, and a drift of rural population into the towns prevails in many sections. Little more than a hundred years ago ours was a new nation. Our fathers felled the forests of a new country, and harvested their crops from a virgin soil. With their crude farming implements they had only to tickle the soil and the plants would grow. But when the soil no longer responded to that sort of treatment, they had only to go a little farther west and take up new lands at $1.25 an acre and repeat the process. Theirs was a steady march with the trend of civilization westward across the continent. They left in their wake a long trail of depleted soils, soils that gave up each year the best they had; soils that yielded to a system of grain-farming that not only robbed them of fertility, but misused and wasted, by failure to husband them, the harvests which they produced.

We can no longer afford to grow any kind of crop of corn, much less a bumper crop, and allow 35 to 40 per cent. of it go to waste after we have grown it. From 35 to 40 per cent. of the feeding value of the corn plant is in the stalk, blade and shuck; the other 65 or 60 per cent. is in the ear. The ears of corn from one acre, of a 40-bushel yield, are worth $24, valuing corn at 60 cents a bushel. If the ears, 60 per cent. or three-fifths of the feeding value of the entire crop, are worth $24, two-fifths, or the amount in the stalk, blade and shuck, are worth $16. But what do we get for an acre of stalk-field? About 50 cents or maybe $1 if cowpeas are planted in the corn. We have lost about $15 worth of good feed by not harvesting the crop at the right time and in the right way.

Suppose we cut up the corn and put it in the shock, it costs on an average about 12½ cents to shuck each shock. Then what does the stover (stalk, blade and shuck without the ear) usually sell for? It brings on an average one year with another about 12½ cents. In other words, we are out 12½ cents. It costs from $1.20 to $1.60 an acre to harvest an acre of corn, 40 bushels yield standing in the field. It costs from $3.40 to $3.60 to harvest this same acre of corn if it is cut and put into the shock, and all the while the grain and fodder are exposed to weather, and damaged from rats and mice. After taking the weather all fall, and until spring when other feeds are high-priced and scarce, this fodder is not worth much as a feed. Stock pick over it, tramp the stalks into the ground, and get just about 5 per cent. of the feeding value from it that they might get if the crop had been harvested in silage.

Again, while the corn shocks are on the ground they are in the way of the next crop. The shocks of a 60-bushel yield of corn cover about 3 per cent. of the acreage. From this standpoint alone it is not economy to have shock corn. But the fodder, after having crowded out some other valuable crop, is frequently hauled out and fed on a hillside or in racks where it is pulled out and tramped down and never gets back to the soil that produced it. It costs on an average about 65 cents a ton to fill a silo. The silage is worth from $3.25 to $3.50 a ton as a feed from the standpoint of actual food nutrients that it contains. But if it takes the place of hay, it is worth whatever hay sells for.

Silage is nothing more nor less than "canned corn," the whole plant, stalk, blade, shuck, ear and all. The principle on which silage is made is almost identical with that which governs the making of a sauerkraut. For this reason some people refer to silage as "cow kraut;" others speak of it as a roughage, having many of the properties of green grass; that is, it is palatable and succulent. It is a good feed for the general or special farmer. All classes of stock on the farm will eat it, often showing a decided preference for silage of prime quality.

Every man who feels silage should if possible feed with the silage some leguminous hay, such as clover or alfalfa hay. A great many men have fed silage alone because they did not have hay. However, better results can be had when hay is fed in connection with the silage. When an effort is made to feed some leguminous hay along with silage it may at first seem a little expensive. This in itself will in all probability suggest that we might just as well grow our own legume hay. If we cannot grow clover well, we can try cowpeas or soybeans. When we begin to grow such crops in a good rotation on the farm, their value will become apparent,

Silos on the Walker farm, Walkerville, Onta rio, where the conservation of soil fertility is one of the first farming principles.

not only in the ration, but in the good they will do the soil.

Silage and some legume hay, when fed together with corn, make a much better quality of manure than that coming from corn, fodder and timothy hay. Of course, any kind of manure is better than none at all, but since no farm produces enough manure to cover every field, it behooves us to improve the quality, especially if it can be done by a better and more efficient system of feeding. Silage feeders find that since they save practically all of the corn plant when it is made into silage they have a greater abundance of feed. The silage being very palatable, the animals really eat more than they do when silage does not form a part of the ration. This means more manure. Nearly every man who feeds silage feeds in connection with it some legume hay and some concentrate like cottonseed meal, bran, shorts or linseed oil meal, all of which are rich in protein. This improves the ration very much and increases the value of the manure.

During seasons like those of 1901, 1911 and 1913 silage is timely and valuable. Following years like these there is always a period in the spring of the next year (it happens nearly every spring) when feed is high-priced and scarce. The man who has plenty of silage does not worry about high-priced hay or scarcity of feed. A Missouri farmer fed $150 worth of silage and a little grain to his stock on the farm, bringing them through the winter in good shape, while his neighbor, who had about the same number and kind of live stock, but did not have a silo, fed 25 or 30 tons of clover hay that was worth from $16 to $18 a ton, and some grain besides, to accomplish the same results.

Silage is a good feed for all young growing stock on the farm. It is a fine feed for calves and stock cattle, for breeding cattle and for colts and horses not required to work. As a means of cheapening the ration for beef cattle, the value of silage is recognized throughout the cornbelt by many practical and extensive feeders. Its value in this respect has long been recognized by the various experiment stations. However, apart from the value of the silo and silage in building up the fertility of the soil, and in economic feeding, there is another value which should not be overlooked.

The man who feeds silage usually puts a little more intelligence into his feeding operations, and sooner or later he puts more intelligence into other farm operations. It is not more farming that we want, but more intelligent farming. A silo is a badge of honor on any man's farm. The man who has a silo, and has boys, too, will have boys who will take a greater interest in their father's business and a greater interest in country life. The man who will build a good silo, feed good live stock and grow good fruit to feed his children on, will grow boys and girls who will love life in the open country and will build their homes there. Our home life in America is our greatest justification for our national existence. It is and needs must be America's greatest bulwark.

Growing Walnuts At a Handsome Profit

The Success of the Industry in the North Western States Indicates Promising Possibilities in Canada

Some facts given by Fred Grover in Better Fruit.

As the walnut industry is comparatively new in the North-West, the question has been often asked, "What income can we expect per tree or per acre from orchards at different ages, and what it costs to bring an orchard up to a paying basis?" Last year a paper read before the Oregon State Horticultural Society on the question of cost and production seemed to me so pessimistic that I set myself about to gather figures on cost and actual returns. The question of how many trees to the acre has been argued considerably, and we find orchards planted all the way from thirty to sixty feet apart, some with fillers of peaches, prunes or cherries and some without.

After years of study I favor planting forty feet square without fillers, if financial returns are to be considered. I will not go into detail in regard to price of land or machinery, as it would vary greatly in different localities, but the cost of first-class trees set in the ground, counting plowing and preparation of the soil, should not exceed $45 per acre. In my six years of experience in intercropping between the trees I have made careful estimates of what it will cost to bring an orchard up to the bearing age, and have raised kale, corn, rape, potatoes, peas, vetches mixed with oats, and wheat and pumpkins If the trees are staked, hogs do very little or no damage to the young trees, and I often have a large herd pasturing on the rape or vetches while feeding pumpkins or cull potatoes. By cultivating clean during spring and summer from one-third to one-half of the ground along the trees, according to age, the other one-half or two-thirds can be made to pay the whole cost of cultivation. While I do not wish to take time to go into this question in detail, as it would take too long, I do not hesitate to say that I can show figures leaving a safe net return, above cost of cultivation and training.

In regard to production per acre, much depends on the number of trees that are planted. An orchard planted thirty feet apart might be profitable at ten or eleven years old, while one planted sixty feet apart may be still an expense, as one would have four times as many trees as the other, and this close or wide planting must be taken into consideration, if you do not want to wait long for net returns. As the trees grow older the difference between the close and wide planting will gradually grow less, and possibly would be about the same at twenty-five years. We have no grafted orchards in the North-West old enough to estimate from, and only a few in California that we can get some idea from. But we have quite a number of topworked large trees that are showing their bearing qualities. Among these trees are the Franquette, Mayette, Meylan, Glady and Payne. The Franquette, Meylan and Glady bear about alike in quantity. The Franquette seems to be by far the best on account of the uniformity of its large, fine nuts. The Meylan is a fine looking nut and of excellent quality, but has the fault of having too many small ones when the trees are heavily loaded. The Payne blooms too early in the North-West. While the Mayette scions were secured from different sources, they are all of true type, but have not yielded up to our expectations.

A seedling Mayette in the orchard of B. N. Sturgis at Vancouver, Washington, planted at five years old seven years ago, bore eighty pounds of true type nuts of fine quality and fair size this season. Quite a number of the larger Franquette trees topworked from four to six years have produced crops of from 50 to 125 pounds. The following returns are gathered from three of about the oldest orchards in the North-West: Mr. Turpening, of Eugene, has five acres of seedlings of different varieties sixteen or seventeen years old; there are many blanks in the orchard where trees had been taken out or died and several that were not bearing, but there were many good trees, some producing close to 200 pounds. I visited this orchard last fall and the owner said it had averaged over $100 net per acre for the last three years and that it would do as well or better this year.

Mr. Thomas Prince, of Dundee, owns the largest bearing orchard in the North-West—about 100 acres, I think. I have visited it many times during the last eight years, and have watched its growth and increase in bearing. Some of the trees are forty feet apart, but most of them are thirty-six feet, planted in a prune orchard in the place of every fourth treet. This being a seedling orchard, there is a wide variation in the production of different trees, some not bearing at all, and others only a few nuts and still others small or poor nuts; yet there are a great many fine trees bearing heavy crops, quite a number this year bearing more than a hundred pounds. A few of these trees, I think, are seventeen years old, while some have been planted only a few years. Mr. Prince stated to me that as near as he could estimate they would average about thirteen years old. The crop this year was about thirty pounds per tree, and sold at an average price of 17½ cents. The prune trees are yet growing in a large part of this orchard. The walnut trees are not doing nearly as

well in this part, as they are badly crowded, but Mr. Prince says it takes a good deal of nerve to grub out a prune tree with prunes at present prices. Even with all these drawbacks, the gross income from walnuts is not less than $175 per acre. The total cost of cultivation, harvesting and drying should not be over $50 per acre, leaving a net income of $125. If the income from the prunes was added to this it would make an eight per cent. dividend on a considerably higher valuation than any of us have estimated at that age.

Mr. B. Norman Sturgis, of Vancouver, Washington, has a seedling orchard of fifty-five trees of an average age of seventeen years, the oldest being nineteen years, planted thirty feet apart, making one and one-half acres. The crop last year was gathered and weighed both green and dry. The best tree produced 227 pounds of dry nuts, and they averaged 68 1-5 pounds, making a total of 3,700 pounds. These returns are far better than I ever estimated. This orchard was brought up to this production by taking out any tree that did not come up to the owner's ideal and planting another in its place. In some places three trees have been planted.

One of three trees in a yard in the suburbs of Brownsville, now twenty-three years old, has produced an average of 150 pounds annually for the last seven years. I have visited the tree many times during the last five years and believe it is the heaviest bearing tree in Oregon. This tree is of unknown origin, it has a very plump kernel and thin shell, but it is not well sealed, and for the latter reason its marketable qualities have been questioned.

Mr. J. F. Bugess, superintendent of the Vrooman orchard at Santa Rosa, California, of about 1,000 trees, states that it is sixteen years old next February, and that it have averaged forty-five pounds per tree for the last four years. This is the mother orchard of all our Vrooman Franquette.

Mr. George C. Payne, near San Jose, California, has a tree that he topworked about twenty-two years ago, at the age of sixteen years. The last five years it has averaged between 400 and 500 pounds, the highest amount being 714 pounds, that sold for $99.98. There would be room for about six such trees on an acre.

I have considerable data on production in Southern California, France and Italy, but as we are not interested in those countries it would be a waste of time to give it here. A comparison between seedling and grafted trees of the Santa Barbara soft shell variety near Whittier, California, on the farm of a Mr. Scott, may, however, be worthy of consideration. The seedling orchard at twelve years old produced $96 gross, the nuts selling at 14 cents per pound, and the grafted orchard at nine years produced $202 gross, the nuts selling at 16½ cents per pound. While this difference seems too great to believe, it is nevertheless a fact we cannot get away from.

The price of walnuts has nearly tripled in the last twenty years, without any prospect of a decrease in the near future, as the planting is not keeping pace with the increased consumption. The main reason for this seems to be the high price of good reliable trees and the wait of eight or ten years before such returns can be expected. Blight has done more or less damage to the walnut crop, but the net loss to the grower is not as much as is often estimated, for as the crop is reduced, the price is advanced in proportion.

Evolution of the Cider Industry

The Old Log Beam Press Supplanted by Hydraulic Power—Some of the Delicious Products

Written by F. B. McMillan in Fruit Grower and Farmer.

INDUSTRIES which live and continue through many generations to be useful to man must pass through periods of evolution. These periods of evolution make for the industry the development which fits them for the conditions resultant of ever-changing time. Progress and conservation bring on these periods of evolution. Conservative feeling has been foremost in the minds of prominent men for many years. The by-products of our mills formerly consigned to our scrap dumps are now being treated and much valuable material obtained therefrom. Forests at one time considered worthless only to be converted into a clearing are now being protected by the government. The same thing is true of our western land and of our mineral possessions. In the meat industry packers have gone so far as to conserve every part of the hog so that now there is "nothing left but the squeal." And last but not least, the farmer is cultivating fewer acres of land and producing more crops than ever before.

Neither has the apple grower been lax in adopting this conservation spirit. Apples which formerly rotted under the trees are now made into cider and from cider into vinegar, jelly and boiled cider. The latter is used extensively in making apple butter and for culinary purposes.

To the orchardist who is enthusiastic with this conservation spirit, the cider press especially should appeal. As a people, we Americans are still woefully wasteful, but we are learning. Some of us have bumped into the fact that it is not only our products that count, but our by-products as well. There are no statistics to tell us how many millions of dollars have gone to waste in rotten apples. They have been allowed to drop from the trees and rot on the ground by the million bushels. Occasionally some farmer has had the foresight to open the orchard gate and let the hogs in. With the further exception of a few mills with which a few farmers ground and pressed the apples into cider, the loss was total.

By the old process of cider-making the apple juice was permitted to remain in contact with the air so long that it was very difficult to keep it sweet; with the improved methods we can have sweet cider, vinegar, jelly and apple butter for our New Year's dinner all made from the same load of apples. The old log beam having a fulcrum at one end and raised by hand power was our primitive cider press. The pressure was obtained from the weight of the log, together with the weight of a man who was stationed at the other end of the log. Next in line came the screw and knuckle joint presses which served the apple grower long and faithfully. But these, too, came to the turn of the road and were supplanted by modern hydraulic presses.

The old style screw press of the small type is still used to some extent where it is desired to make a small amount of cider at odd times for private use. These presses will turn out from 40 to 100 gallons daily, and are sold at prices ranging from $10 to $20. The modern hydraulic press is equipped with a piston working in a cylinder. Water is easily pumped through a small pipe into the cylinder, the pressure being applied against the end of the piston or ram. The ram is thus forced out, pressing the apple pomace which has previously been prepared by a hand or belt-driven apple grater. An average of four and one-half gallons of cider can be produced by these presses from a bushel of apples; and from 300 to 6,000 gallons of the juice were made per day. The hydraulic press has put the cider industry on a paying basis. The price for making cider ranges from one to three cents per gallon; one day's run of 4,000 gallons, say, at two and a half cents per gallon would make the operator $100. Treated cider sells as a soft drink at 50 cents to 70 cents per gallon; 100 bushels of apples unfit for market could thus be made to yield between $200 and $300 with very little labor. Some of the useful products which come from the apple are vinegar, cider syrup, cider jelly, apple butter, pasteurized cider, etc. Below is given a brief description of these products:

VINEGAR.

The process of transforming apple juice into good cider vinegar is easily accomplished, and can be produced in every household where the necessary temperature can be controlled. For vinegar, the windfalls may be used, or the pomace of later pressings may be repressed, but for a superior article only sound ripe apples should be used. Common experience teaches that if cider is exposed to the air it will soon ferment.

Now, by proper handling, after the first stage of fermentation the cider may be converted to vinegar in a very short time. It is well understood that fermentation is the work of myriads of bacteria that infest the cider and behave very much after the manner of yeast in bread making. Cider, in changing to vinegar, passes through two stages: First, the sugar of the juice is changed to alcohol. Second, the alcohol is changed to acetic acid or vinegar by further fermentation.

CIDER SYRUP.

Evaporation is another method of treating cider. By this process the volume is greatly reduced and the resultant product is so concentrated that it will remain in a perfect state of preservation for years. In this way two great advantages are secured: First, the product can be stored in much less space, and, second, it will keep indefinitely. When the cider has been reduced in volume in the ratio of five gallons to one, the product is of such consistency as to be suitable for handling and in no danger of fermenting. This product is called cider syrup, or boiled cider, and is widely used in making apple butter, mince pies and the various products of the culinary art.

CIDER JELLY.

When evaporation is carried further, reducing the volume in the ratio of about seven to one, the product is known as cider jelly. In this form it is quite acceptable to those who like a jelly somewhat tart. By adding sugar it may be made to please the taste of those who like jelly of a milder, sweeter taste. The jelly may be flavored to suit various tastes by using any flavoring material that will not evaporate readily. Apple jelly is usually marketed in glass jars holding two or three pints.

APPLE BUTTER.

One of the chief uses of cider syrup is in the making of apple butter. Everybody knows the "goodness" of apple butter. Fond memory will hark back to "bread, butter'n apple butter." This apple product, combining as it does the essentials of the best fruit known to man, well deserves high rank as a staple food and table delicacy. The slow, laborious method our mothers used—making apple butter in a big copper kettle—has given place to the new steam cooker. A copper coil quickly and easily converts a quantity of pared apples and cider syrup to a clearer, smoother and more delicious product than even mother was able to give us for our "piece." In the old method heat caramelized some of the sugar, which gave the butter a dark color and a burnt sugar taste. By the use of the simple, inexpensive apple butter cooker, these objections are overcome, and a much more delicious product produced. There is a good market ready and waiting in every town and city for this delicious product for the table.

PASTEURIZED CIDER.

Still another method of treating cider is the process known as pasteurization. Many attempts have been made to preserve cider sweet and pure, just as it comes from the press. The use of preservatives is very unsatisfactory and often dangerous. It is well known that a fruit juice can be preserved by heating it and sealing it up, but the chief difficulty in this is to heat to the proper temperature and at the same time exclude the air. A temperature of 160 degrees Fahrenheit is sufficient to destroy bacterial life and prevent fermentation, but a temperature higher than 170 degrees Fahrenheit will give to the cider a baked apple taste, rendering it undesirable as a drink. A simple pasteurizer will perfectly sterilize, filter, and seal up cider so that it will keep indefinitely and retain the same flavor that it had as it came from the press. The health giving properties and the medicinal qualities of pure apple cider give rise to a popular demand for the product of our pasteurizer. Pasteurized cider retails at prices that net the cider maker a handsome profit.

These are some of the most important uses to which the low-grade apples may be put in order to convert them into a marketable form. Any one or all of them may be made at home or in the small farm factory as well as in the large commercial plants. There is always a market for such products, and the really surprising thing is that this market has not obtained more attention from the apple grower. Pure cider vinegar is hard to obtain, as a great deal of the vinegar on the market which passes for cider vinegar is more or less adulterated with distilled vinegar.

Every city, small town or hamlet needs large quantities of one or more of these products of the apple, and it is the home market which affords the greatest opportunities for the apple grower who is equipped, at least in a small way, for making these by-products of the apple. Especially is there a large field for good apple cider vinegar. This is a necessity of greater or less importance in every home. But on account of the lower cost of distilled vinegar it has largely supplanted the product of the apple. Every housewife, however, prefers cider vinegar for the majority of uses for which vinegar is required, and with the development of the parcel post there is an opportunity for a considerable trade in vinegar by mail within the zones where the postage is not too high.

As a means of utilizing waste apples, the cider mill has long occupied a prominent place, and its value is becoming even greater. There is a cider mill of suitable size for every orchard, and while it may not be most economical in every instance for each apple grower to have his own cider plant in those sections where a large acreage is found, co-operative or privately owned mills of suitable size for handling the tonnage are good money makers. Such plants will not only buy apples to press for their own trade, but also do custom pressing, and in this way add to their own revenue.

Commercial cider plants find it advantageous to have storage tanks for holding the surplus cider until it can be disposed of. Such tanks resemble silos, and should be a part of the equipment of every cider mill.

Apples on Ice

Various Methods of Holding Fruit in Storage for Better Prices

From an article by W. J. Young in The Country Gentleman.

WHEN the apple crop is light prices run high, but few growers have enough fruit to give a substantial profit. In seasons of a full crop prices are likely to run so low at picking time that many growers despair of reaping adequate returns for their labor. This instability of the apple market is due in great measure to the fluctuation in production from year to year. New markets that are opened up in a season of heavy crop are largely lost in succeeding light or medium crop years, and when another heavy crop is gathered markets are rarely found in time to prevent low prices and discouragement.

As a partial remedy for this apparent overproduction in certain seasons it has been suggested that part of the crop be held in storage until the market shall have time to adjust itself and an equalization of prices can take place. To many growers storage seems a hazardous undertaking, with danger of losing the entire stored product in an effort to obtain a more satisfactory price; others find it financially impracticable to delay the date of sale by several weeks or months.

During the last quarter century apple-storage problems have often been the subject of investigation by the experiment stations, the United States Department of Agriculture, and cold-storage warehouse men, with the result that much light has been thrown upon conditions that affect the keeping quality of the fruit and the most successful methods of handling it in storage.

As a means of extending the time during which the crop can be sold, storage, especially cold storage, has an effect upon the market similar to a wider geographical distribution. In either case surplus fruit is placed where it will not compete with the rest of the crop. There is, of course, the possibility that an excessive amount of fruit may be put in storage and later placed upon the market all at once, with disastrous results, but such an event has never yet occurred and it is extremely unlikely.

In all experiments reported, where sound fruit of long-keeping varieties was placed in storage at a proper temperature and not held too long for the variety,

the increase in price realized has been sufficient to cover all costs involved and usually to yield a good profit besides, to say nothing of increasing the price of the remaining fruit.

All forms of storage that do not make use of some method of artificial refrigeration are grouped together as common storage. The most primitive form consists of a pit, dugout or cave. Though not adapted, as a rule, to commercial storage, these methods often give fairly good results in the preservation of fruit for home use.

In constructing a storage pit choose a well-drained location and dig a rectangular hole a foot or more deep and large enough to accommodate the apples to be stored. Line the pit with a thick layer of straw, upon which place the apples in a conical pile, cover with more straw, and add sufficient soil to exclude frost. A covering of boards is sometimes added to help keep out moisture. If more than ten or fifteen bushels of apples are to be stored it is well to construct a series of independent pits, to be opened in succession as the fruit is needed. Apples often keep surprisingly well in pits of this sort; shriveling is practically eliminated, but the fruit takes on a flavor from the straw and earth.

Dugouts are usually constructed in a bank or hillside. The excavation is lined where necessary with walls of timber or stone, a timber roof is added, and the whole is covered and banked up with earth.

Perhaps the most common method of storing apples for home use is to place the fruit in barrels or boxes in the house cellar. Few cellars, however, will keep the fruit in good condition, and where a more satisfactory method is available it is usually best to keep in the cellar only as many as can be used without loss from decay. When cellar storage is the only kind available the fruit should be looked over frequently, especially late in the season, and all apples not in good condition removed.

Several types of storage houses have been devised, making use of ventilation as a means of securing and maintaining a low temperature. A series of ventilators that can be opened at night and closed during the day admit the cool air near the floor of the building, while outlets for the warm air are provided through the ceiling and roof. The walls are tightly constructed of two or more layers of well-matched lumber, separated by air spaces or insulating material of some kind in order to protect the room as much as possible from the influence of outside temperatures. When well built and carefully operated such storage houses will keep apples in good condition for a number of weeks, and some apple growers have found them fairly satisfactory for commercial storage, though they are usually less efficient than cold storage. They are, however, indispensable as a means of temporary storage until the apples can be graded and packed for shipment or placed in a cold-storage warehouse.

Simple storage houses using ice for refrigeration have not been a practical success because of the difficulty of keeping the cold air in circulation. For this reason cold storage has largely become a special industry apart from fruit-growing.

In a Northumberland County co-operative orchard where apples packed 90 per cent. No. 1's.

In the brine-circulation system a strong salt solution is cooled by artificial means and is pumped or allowed to circulate by gravity through coils of pipe in the storage chamber. In the cold-air-circulation system the air is cooled to the required temperature in an outside chamber and is forced into the storage room from all sides.

If the aim is to preserve the fruit as long as possible, the most desirable temperature is that at which destructive changes take place most slowly. This has been found to be the lowest temperature that can be maintained without danger of freezing. The present practice is to hold apples in cold storage at from thirty-one to thirty-two degrees Fahrenheit. Summer apples, to be stored only a short time, are often kept one or two degrees warmer. A higher temperature is favorable to ripening if the fruit is wanted for use after a short period of storage. If the fruit has been roughly handled or exposed to heat a very low temperature is required. Fluctuations in temperature hasten the ripening of the fruit. It is evident, therefore, that the most efficient storage is that which gives an even temperature close to the freezing point.

A fairly humid atmosphere is generally the most favorable for storing apples. Transpiration takes place more slowly and the fruit keeps without wilting for a much longer period than when the air is dry. Dampness, however, is favorable to rot, and apples should not be stored where moisture will condense upon the surface of the fruit. If fungous infection is present the apples will keep best in a rather dry atmosphere and the temperature should be held very low.

Success in apple storage depends to a marked degree upon the selection of varieties suited to handling in this way. In general it may be said that the early varieties are not well adapted to storage. Summer apples as a rule pass quickly through their period of usefulness after picking. The warm weather prevailing at the season of their maturity is favorable to rapid ripening and deterioration. It is best, therefore, to dispose of early apples at once, though fruit of high quality may often be held in cold storage profitably for a few days to relieve a glut in the market.

PACKING BEFORE OR AFTER STORING.

The question sometimes arises whether apples should be packed for sale before storing, or sorted and repacked after removal from storage. The answer depends largely upon circumstances. If the fruit is shipped to storage at a distant point, it is usually impracticable for the grower to repack the fruit. In such a case it is usually more economical to see that the fruit is carefully graded and packed in the first place and then make sure that it is not left in storage long enough to undergo serious deterioration.

If, however, there is reason to believe that the grading has not been thoroughly done, that fungous infections are present, or that conditions have prevailed that might interfere with keeping, or if the fruit has been held for a long time in storage, sorting and repacking will usually be necessary.

Box apples are wrapped in paper; barrel apples are left unwrapped. Apples to be repacked after removal from storage should not be wrapped; otherwise the wrapper is an advantage. Though it slightly retards the cooling of the apples, it protects them against changes in temperature, thus delaying ripening and extending the season.

The bushel box has several advantages over the barrel for handling apples in storage. Its smaller size enables the fruit to cool off more quickly and uniformly and therefore to ripen more evenly. It is easier to handle and is more economical of space. Bruising is less likely to be serious, and the fruit is not so apt to work loose by shrinkage. It is of special advantage in warm weather and in handling early varieties. An open package may allow the fruit to cool off more rapidly, but a closed package tends to check evaporation and to prevent wilting.

Ripening and the processes that lead to deterioration are hastened by picking

if the temperature is high. These changes are retarded, though not completely checked, at the temperature of cold storage. It is the universal experience of those who have tested the matter that apples stored immediately after picking keep better than if storage is delayed, and the result has been more marked if the weather is warm.

Apples intended for immediate use may be shipped by express or freight at ordinary temperatures, and in the case of fall or early winter varieties may be expected to attain a good edible condition by the time their destination is reached. Later varieties will show less change, though their value for storage will generally be lessened. Summer apples, because of their more perishable nature and the higher temperature, can be shipped only a limited distance without refrigeration.

Winter apples destined for storage should be shipped under refrigeration unless the distance is short and the weather cool. It is generally unsafe to ship apples in very cold weather because of the danger of freezing. In shipping apples that have been in storage, choice of transportation will depend upon ripeness of the fruit, distance, and prevailing temperature.

Scalding is the name applied to the brownish discoloration frequently noted upon stored apples. It is usually most troublesome on green or yellow apples, and in red varieties appears first on the less highly colored side. The trouble is confined to the skin and does not affect the quality of the apple, though it renders the fruit unsightly, and therefore less valuable. Delayed storage, especially in warm weather, and high or uneven storage temperatures, promote scalding.

Scalding may be reduced to a minimum by the practice of methods that result in well-matured, highly colored fruit. As a further remedy, protect the apples as much as possible from high temperatures before placing them in storage, and then store them as soon as possible at a low, even temperature.

There is a somewhat prevalent opinion that apples that have been in cold storage must be used very soon after removal. Though the point is not definitely settled, it seems probable that cold storage does not of itself seriously affect the subsequent behaviour of the fruit. The temperature to which the fruit is removed is important in determining its keeping. It should be placed in a cool, dry atmosphere and allowed to warm up gradually to the outside temperature, after which it should be kept in a cool place.

USING OLD HONEY.

Honey should always be kept in sealed packages in a dry warm room. Where storage conditions have not been perfect the best honey will often have a sour odor on opening the can after several months' storing. This, and the slightly acid taste which often accompanies it may be removed by placing the can in a vessel of water which is kept hot, but not allowed to boil, for about twelve hours.

Canning Summer Vegetables

The Farmers Wife Provides a Pleasing Variety for the Winter Bill-of-fare, and Curtails Her Grocery Bill

By JEAN MacKENZIE

DURING these summer months, when everyone is enjoying the fresh vegetables, now in season, who would not like to see a supply of them canned and put away in the cellar for winter consumption. Many people make a practice of canning their surplus beans, asparagus and other vegetables which are not kept through the winter, and find them a welcome addition to their winter vegetables, and much superior in flavor to the canned goods, excellent though many of them are. If the directions are followed carefully, there is not one chance in a thousand of failure and the difference in your bill for canned goods will be very noticeable.

The flavor of most vegetables is improved by blanching, that is, boiling in water in an open kettle for ten minutes before canning, using one-quarter pound of salt to every five quarts of water. This water is to be drained off Select only absolutely fresh and sound vegetables for canning, the process of cooking does not restore unsound material to good conition.

Select wide-mouthed jars for vegetable-canning so that the pieces may be put in unbroken, and the jars with tin tops held on by clamps, are preferable, as they permit the steam to escape. Rinse the jars with warm or cold water, let cool, place vegetables inside, and fill to the brim with fresh water, clear or salt as directed in the various recipes. Rinse caps of jars in cold water, place on filled jars, and adjust one clamp to each jar. As the steam forms during the cooking, it finds an outlet by slightly lifting this pliable cap.

Place a wooden rack on the bottom of the boiler, this may be made of laths nailed together, or a board with holes, which will fit the bottom. Set the full jars on this rack in the bottom of the boiler. Fill the boiler up to the necks of the jars, with water of the same temperature as that in the jars, and heat gradually to a boil. Note the time when it begins to boil, and keep the water boiling hard for the full length of time specified in each recipe. Pour in a little hot water from time to time to keep the water up to the necks of the jars.

After the vegetables have boiled the full time (in high altitudes it is well to boil from thirty to sixty minutes longer than is called for) be sure that no seeds or fragments of the vegetables are lodged on the sealing rim, between the cap and jar. If the caps must be taken off to remove any foreign substance they must be replaced and the jars put back in the boiler and boiled again for five minutes. Remove the jars while boiling hot, and set aside to cool, wet surface. When the jar is cold, the next day, remove the clamp from the lid of the jar. Test the sealing by trying to lift the cap, and it will be well to test this every day for a week. If the top is loose, the contents of the jar must be recanned. Keep the jars in cool, dark place, and if directions have been followed carefully there will be no danger of the contents working.

PEAS.

Peas and corn are the two vegetables the most difficult of all to can successfully, and very great care must be taken. Select young, fresh peas, shell and wash them. Boil in an open kettle for ten minutes, to blanch them, pour off the water they were boiled in. Pack the peas into well-washed jars, and cover with fresh water, add one teaspoonful of sugar to each pint jar of peas. Boil three and a half to four hours.

BEANS STRING.

Select beans that are quite brittle, tender, and fresh from the vine, cut in convenient lengths, or beans may be canned whole if preferred. Boil in an open kettle for ten minutes, and drain off the water. Pack solidly into jars, fill to overflowing with fresh cold water, can and boil three hours.

CORN.

Procure perfectly fresh, young corn, score down the centre of each row and press out the pulp. Wash jars very carefully, fill with corn pulp and a little water to within half an inch of the top. Add salt and a little sugar if you like it. See that the water soaks well into corn right to the bottom of the jar. Boil for four hours, and test the caps every day for ten days after.

CORN ON COB.

Secure medium-sized cobs of fresh young corn, wash, pack neatly into jars. Cover with clear cold water, boil five hours.

MUSHROOMS.

Wild mushrooms should be canned without stems, though these may be canned separately, and used as seasoning for sauces. Wash the mushroom caps carefully brush with a flannel cloth, but do not peel. Pack into jars, adding water if desired. Place into boiler, boil one hour. Then fill every two jars from a third and boil one hour longer.

LIMA BEANS.

Use only young tender beans for canning. Wash them carefully and boil for ten minutes, then drain off the water.

Pack into jars, add a teaspoonful sugar and a teaspoonful salt, to each quart of fresh water used, and fill the jars full. Boil hard for three hours.

ASPARAGUS.

Wash, cut into convenient lengths, boil in an open kettle for ten minutes, then drain. Scrape off the scales and thin skin. Pack into jars heads up. Add a teaspoonful salt to each quart of water used, fill jars to brim. Boil constantly three hours.

CARROTS SWEET PICKLED.

Select carrots of uniform size, and small enough to fit neatly into jars. Cook tender, and let cool. Pack the carrots in jars, and pour over them, boiling hot, the following liquid: 1 cup sugar, 2 tablespoons mixed spices, 1 pint vinegar. Boil five minutes. Fill jars brim full, clamp on cap, and boil fifteen minutes.

CELERY.

Select fresh crisp celery, and cut into half-inch pieces. Wash in cold water, drain, sprinkle lightly with salt, and let stand over night. Then take one pint of vinegar, one half-pint of water, and one cup granulated sugar to each quart jar. Boil all about five minutes, add celery and boil together ten minutes longer, allow to cool, can and boil fifteen minutes.

TOMATOES.

Select solid tomatoes of medium size. Peel and arrange neatly in jars, to each quart jar add one teaspoonful of salt. Boil a few tomatoes and mash them, strain juice and pour over the tomatoes in the jars, cap and clamp. Be very careful there are no seeds on the rim of the jars. Boil hard forty-five minutes. To preserve tomatoes with the skins on, prick tomatoes with a fork, in two or three places, then proceed as above.

SPINACH.

Wash carefully in cold water, then boil for six minutes in fresh water. Cool off in running water. Chop the leaves, add salt to taste, bring to a boil on top of the stove, put hot into jars, cover and boil for one hour.

PUMPKIN.

Peel, cut in pieces and steam until tender enough to mash. Put hot into jars, add a little water, seal and boil for one hour.

SQUASH.

Hubbard squash is the best keeper. Cut into pieces and bake until soft. Scrape out the shell into a saucepan and pack hot into jars, cover and boil for one hour.

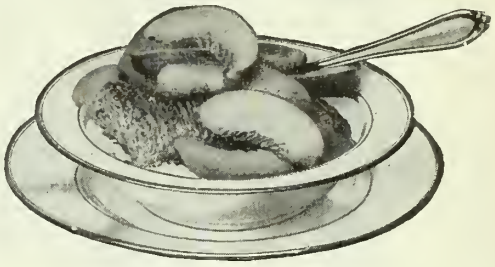
SUMMER SQUASH.

Cut the squash in pieces and boil until tender. Mash through a colander, fill into jars and boil for one hour.

ONTARIO HONEY SCARCE.

The report issued by the Ontario Beekeepers' Association shows that the prices for honey this year will be high. 515 members reported from all parts of Ontario. The result showed an average of only sixteen pounds of honey per colony, whereas a similar report for 1913 showed an average of 100 lbs.

A Five-Cent Banquet



The costliest banquet ever spread, with all the gastronomic concoctions that culinary genius can devise could not contain as much real body-building, digestible nutriment as two

Shredded Wheat Biscuits

the food that contains all the elements in the whole wheat grain steam-cooked, shredded and baked. It is what you digest, not what you eat, that builds muscle, bone and brain. The filmy, porous shreds of whole wheat are digested when the stomach rejects all other foods. Two Shredded Wheat Biscuits, with milk or cream and sliced peaches, make a complete, perfect meal at a cost of five or six cents.

Always heat the Biscuit in oven to restore crispness; then cover it with sliced peaches or other fresh fruit and serve with milk or cream. Try toasted Triscuit, the Shredded Wheat Wafer, for luncheon with butter, cheese or marmalades.

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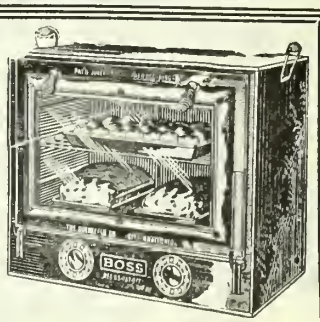

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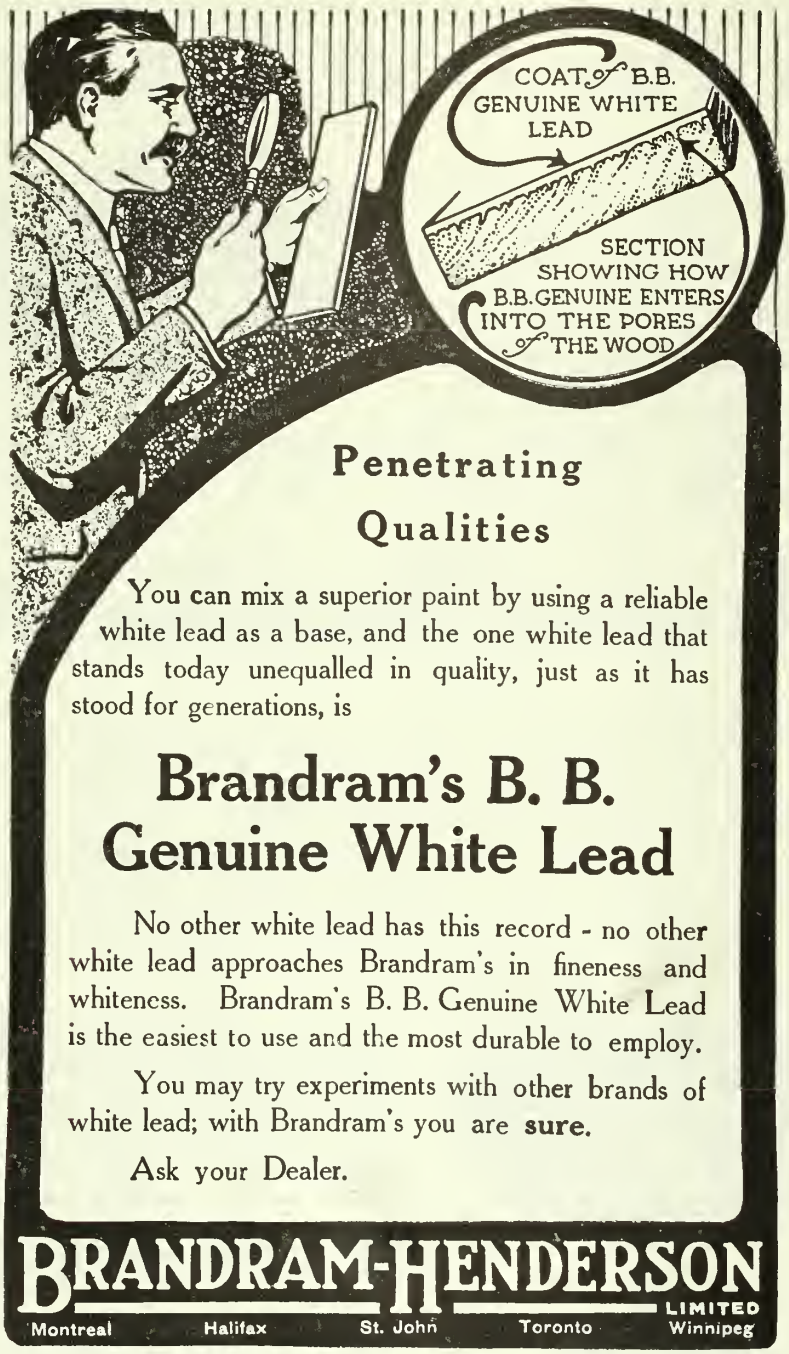

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Most all up-to-date grocers carry a stock.

PETERBOROUGH CEREAL COMPANY
SIMCOE STREET PETERBOROUGH

On the Fighting Line in Riel's Day

Continued from Page 40.

chief and bringing him into camp seated behind him on his horse. Hourie was much lionized in Winnipeg and other places later on, but lionizing was not as healthy for him as his free life on the plains. His popularity made him somewhat dissatisfied with the one kind of life for which he was fitted and, when the popularity wore off, he never seemed to regain his old vigor. He died about seven years ago.

A sad incident at Batoche was the shooting of Capt. Jack French of French's Scouts. He had done splendid service and was in with the first. After it was all over he was standing looking out of the window of one of the houses that had formed Riel's headquarters when an old half-breed who lay in a bush near by shot him. Exclaiming, "Don't forget, boys, who brought you here," French fell and, in a moment was gone.

Batoche was Middleton's last fight and it was a far cry from Lucknow where this sturdy and dashing Irish soldier had first won his spurs. But as on the hot sands of India he had demonstrated early in his career his fearlessness, so in the closing days of his soldier experience he had on the snowy plains of the far West given the Canadian soldiers a good example of the gentleman unafraid.

From Batoche he moved on to Prince Albert and thence to Battleford where the big chief, Poundmaker, was not yet subdued. Otter, who has given ample evidence of his soldierly qualities, had made a spectacular march from Swift Current to Battleford, going 190 miles in the remarkable time of only five and a half days. At Battleford he was received with great enthusiasm because for many weeks the place had been practically in a state of siege at the hands of Poundmaker's band. All the settlers in the district had been huddled together inside the stockade and the strain and anxiety was telling, especially on the women and children. Poundmaker had not actually declared himself either way by any open movement, but the Indians that were attached to his camp were terrorizing and, to some degree, plundering the neighborhood. So after a few days Otter decided to find out Poundmaker's position and at the same time ward off the chance of a junction between him and Big Bear who was hot on the war path. Otter, taking most of his forces, moved out to cut Knife Creek where Poundmaker had the usual immense advantage of his own ground. Our men were practically hemmed in down a ravine from the sides of which a fierce cross fire was poured by the Indians. Otter's brigade stood its ground with every mark of coolness and determined courage and after some hours' fighting retired in an orderly way to Battleford to defend it against a counter

attack. But Cut Knife and the news of Batoche took the heart out of Poundmaker, and he remained in Camp till he later, on May 26th, just as our column under General Strange was coming into close grips with Big Bear and his murderous band. But we shall leave that story for the next article.

How About Your Daughter?

Do You Know That Ignorance Is Dangerous?

By ALBERTA M. KEPPER

A LONG line of weazen-faced "girls" passed me on the street. On their cheeks was the palor of too much housing. Old or young there was the same hurrying but spiritless step like that of jaded horses that scent no rest ahead.

There was neither care-free words nor laughter befitting a bright morning. It seemed the suppressed noises of machines —each one a part that was numbered to facilitate duplicating.

Inside the file was broken. They went mechanically to their places, some up and up. I followed until the street was far below, yet great, grey walls shut out the sunshine; shut out the joy and light of a perfect day.

The girls must stand and wait, unfold and fold, as suits the caprice of the customer. There she smiles the thin, lifeless smile of one that must, though the soul cries in rebellion.

Involuntarily the question comes: "Is this the dream of the rural girl come true or has she found too late that she is the victim of the broad-spread delusion that the city holds only opportunities—that it waits with open arms to lift her to higher, pleasanter living. This is the girl behind the counter, but this is not the only country girl nor the one to be pitied. She that had marked beauty was whisked away to a life of sin before the roses faded from her cheek, while the whiff of fields clung to her skirts. She did not know!

Country mothers are mostly silent. The subject is not pleasant. They keep away from it, expecting their daughter to be pure, because they are innocent. They are untaught. They expect vice to be branded that all may recognize it. They look for repulsive outward show. They expect men to be like father and brother as they know them, and the neighbor boy that romped the days away without evil suggestion. She does not fear the world because she is as strange to it as the child still clinging to its mother's skirts. People who know fear for her. In every city good women—you may know them by their white ties, by the familiar dress of the sisters of charity, by their badges—meet the trains and reach out, trying to drag these girls out of the very jaws of shame.

Our untaught daughters expect women to be universally like mother. They are not told that women are white slave traders as well as men. That women are as vicious and even more cunning than men. That the woman that sympathizes and offers ready information or assistance, promising pleasant employment, is in reality calculating the probable profit she can make out of a girl's physical beauty. Our little rural girl believes in people. To her everyone is as good as Aunt Jane, but ever so much nicer with their polish and all that. She wonders how anyone ever lived back home, and so in the glamor and flash of the new surroundings she finds herself admired by men. The admiration she believes as pure as that of the boys she knew at home and ever so much more to be sought.

There's a dinner, a dance, and she can't go back. She believes his vows of fidelity. His excuse for postponement of marriage is all-satisfying. She does not know the world. She is a plaything to be thrown aside when a fresh toy comes along. Hers is not an up and down existence. God pity her—the way is all down—down until we find her beauty gone, her health broken and her conscience dead. She goes about soliciting. Her jewels and gewgaws of the early days of shame have vanished—she is an outcast.

Her partner in sin, too, has vanished, he of the dinner and dance. Maybe he is in a happy family circle where a good wife never suspects. Or he may have gone on first with one and then another of our beautiful bright facial country girls, casting them into living death while he mingles among men and no one questions his right to be respected. The double standard of morals is the root of the social evil.

Why must our country girls keep up the supply of vice material? In Chicago alone 90 per cent. of fallen women are country bred. Did no one warn them? Yes, warnings are sent out. We see them in the great city dailies, in special publications, and in various places—but our country girl seldom reads these. She is not warned.

Mothers have a duty here and we must one day give account. We must put "The Scarlet Letter" into the hands of our daughters, and impress the truth upon them that to-day like then, women—wronged women—must bear the burning brand where all may see. She cannot escape the sin.

Another difficulty is the neglected social life in country places. Stagnation is shunned by the bright, alive young people. There is but one way to stem the awful destruction and that is through mother's wisdom. Teach the girls the worth-while things. Show them the beauties that encircle country life. Put aside false modesty and come to know your daughters. Be their chums, and fail not to impress the sons with the fact that you expect them to be as moral as their sisters

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Every subscription is entered under the name of the town from which the subscription is received. If you change your address and desire to receive your magazine without delay, always give us your old address in addition to your new one, otherwise we are unable to make the correction in our mailing list. As we publish fourteen magazines and newspapers, please mention MacLean's Magazine in your letter.

THE MACLEAN PUBLISHING COMPANY, LIMITED
143-153 UNIVERSITY AVENUE, TORONTO

—that if they cause any girl's downfall they drag all women lower, that grave as is the end of the boy or girl gone wrong, there is worse in store for their children. The inherited taint of blood that marks them, and causes suffering for which they are not responsible is one of the penalties of sin. Their resisting power is lessened; they are defective, degenerate.

Only country mothers and fathers have opportunity to prevent this degradation to our posterity. We dare not longer flinch from responsibility. We must give an account of the lives entrusted to us in all their purity and innocence. We have "washed our hands" of the disagreeable because our homes are spared and the problem seems remote, but facts are not to be ignored. The cities beckon. We must put more of play, more joy, more refinement of living into the rural homes. We must raise the ideals and put manhood and womanhood above other things or we are lost.

Real Neighboring

Continued from Page 37.

But the best piece of neighborhood work that the institute undertook, began with a charity resolution—not an "old clothes and food basket" charity, but a charity of speech and attitude. It started in this way.

One spring an immigrant and his family moved in, and settled on a rented farm in the neighborhood, and their ways did not conform to the established customs of the old settlers, and the wives of the old settlers were generally disturbed. They whispered about the color of things on Mrs. Zlofkoff's clothesline, and they told their children to keep away from the Zlofkoff children at school. In short, the Zlofkoffs were thrust into social refrigeration, so far as their neighbors were concerned, until the woman who believed in neighboring startled the members one day by reminding them that the society was just existing for its own pleasure, that it wasn't reaching out for its opportunities. Then she moved that every woman make a resolution to say nothing in a person's absence that she would not say if they were present, and to cultivate the habit of standing by "those who needed support."

It was a hard principle to carry out but it was the beginning of the immigrant woman's education in Canadian ways. She went into other homes and saw new methods. Some of them were too foreign for her to copy, but her daughter learned them, and their cloud was lifted.

Then there was the little girl trying to fill her mother's place in the home. The housework that she didn't understand very well, the care of the younger children, the general responsibility and loneliness that came into her life when her mother's safe-guarding presence went out of it, all these were weighing too heavily upon her young shoulders. One couldn't go to her with a patronizing sympathy, because she knew her father was too poor to hire help and she was proud.

But the woman who was a good neighbor could drop in to visit, and cut out the children's dresses, or put the boys' shirts together and inspire a friendly confidence that would come for advice about more important things. She could take an interest in the girl's company and see that she met some people who would give the right color to her ideals.

The woman who thought neighboring had gone out of fashion marveled at the way the young people came informally in two's and three's and wagon-loads to spend odd evenings at the home of the woman who believed in neighboring. Quite as much she wondered that the unexpected comings and goings never worried their hostess. She received them as informally as they came and they always had a good time. But one day the house hummed with preparation for company. "I'm going to have a party for the boys' friends," she explained. "One of the neighbor boys is coming home and I want to get him started right. It's a strange thing," she observed thoughtfully, "that when an accident, a misfortune, what people call a disgrace, happens to anyone in the country, it is remembered forever. In the city it would be lived down, and forgotten as soon as the press was through with it, but out here where friends are supposed to be the truest, everyone's parlor seems to have a photograph album of the skeletons in other people's closets. Now this boy got into debt and ran away, more through fear of his father than through fear of the law. He has paid the debt and his mother has heard from him regularly ever since, but the neighbors never mention his name to her, as though he were ostracized for life. If he isn't made to feel that he has the same old footing that he always had when he was here, no doubt he will go again—dear knows where. The life of the social outcast in the country is not only maddening to the individual, but an eloquent rebuke to the self-righteous neighbors."

And the woman who though the spirit of neighboring was dead saw it revived according to an ideal she had never dreamed of—not as a form of social reciprocity, but through the impulse of universal helpfulness, a love reaching out and out beyond our own.

A USE FOR STRAW.

An idea is said to have originated in Lyons, France, whereby straw is used for making artificial wood. The process consists in transforming straw into a solid material having the resistance of oak. The straw after being cut into small pieces is reduced to a paste by boiling, to which certain chemicals are added. When the paste has been reduced to a homogenous mass it is put into presses, and planks, beams, laths of all sizes are readily made. Nothing is said as to its cost and weight, but it is presumed these would have some advantage over the natural product, and the possibility of splitting certainly ought to be much less.

If some use could be made of the big by-product of the prairies, less burning of straw piles would decorate the prairie nights in harvest time.

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THE LURE of the LAURENTIANS

By EZRA BUTLER EDDY.

The lure of the Laurentians burns within the stranger's bosom
Long before 'tis ever kindled in the thoughtless native son;
The mystic blue that shields them seems to call you, call you to them,
Yet you wander to the end o' earth before your heart is won—
Won at last by those same mountains that in youth you cared to shun.

The solemn, stately grandeur of the Rockies, lost to sorrows,
Like sentries of the silences that stretch out to the sea,
Will fill your mind with memories to haunt the dim to-morrows,
And tempt you to return again, as though 'twere Fate's decree;
But listen to the old love, then the others swiftly flee.

The hills of California, that realm of romance golden,
Where black-eyed senoritas look around them with disdain;
And underneath the orange trees, historic tales so olden
Are told of dreary missions, mossy sepulchres of Spain.
The hills of California—I give them back again!

The snowy crests of Oregon, or dreamy Colorado,
Where Pike's Peak guards eternally the Garden of the Gods;
The heights that kiss the heavens on the borders of Nevada;
The southland, where the mountaineer along a pine-trail trods;
Each wins my admiration while a fickle world applauds.

I've seen them all, from east to west, and yet my face is turning
Across to my Laurentians; to each cool, enchanting knoll.
I spurned their simple welcome, still to win it back I'm yearning;
O, death without another glance would be the proper toll,
For he who scorns Laurentian hills is traitor to his soul!

Our Pattern Pages

Patterns will be sent Post Free on Receipt of Price. Address Pattern Department, Farmer's Magazine, 143-149 University Avenue, Toronto

6792—LADY'S DRESS.

This model gives us a charming form of the new Russian tunic dress. It has a plain, full blouse, with drop shoulder and side, front closing, and with open neck trimmed with a flare collar. The three-gore underskirt has a pleated lower section and a two-piece tunic gathered at the top. One or two materials may be used in making a dress of this description.

The dress pattern No. 6792 is cut in sizes 34 to 44 inches, bust measure. Medium size requires for waist and tunic 3⅝ yards of 44-inch material; for lower section pleated 1½ yards of 44-inch goods; plain ¾ yards of 36 or 44 inch. Also 1¾ yards of ribbon for girdle and 1⅞ yards of 36-inch lining.

This pattern can be obtained by sending 15 cents to the office of this paper.

6738—LADY'S WAIST.

In this waist we have the novel and attractive large armhole, which gives great looseness under the arm. The front and back are in one piece and the closing is placed diagonally. A wide collar finishes the neck. Crepe de chine, handkerchief linen, chiffon, organdie, voile, etc., are materials suitable for such a blouse.

The pattern 6738 is cut in sizes 34 to 44 inches, bust measure. Medium size requires 2¼ yards of 44-inch material, ½ yard of 27-inch contrasting goods for the collar.

Price of pattern 15 cents.

6731—LADY'S WAIST.

Suitable for soft materials such as chiffon, lace, voile, crepe de chine and the like is this dressy blouse. It has a long shoulder yoke to which are attached the front and back, both gathered and very full. There is a collar which forms a point in the back and ends just in front of the shoulder seam in front. The neck is open.

The pattern 6731 is cut in sizes 34 to 44 inches, bust measure. Medium size requires 2¼ yards of 36-inch material.

Price of pattern 15 cents.

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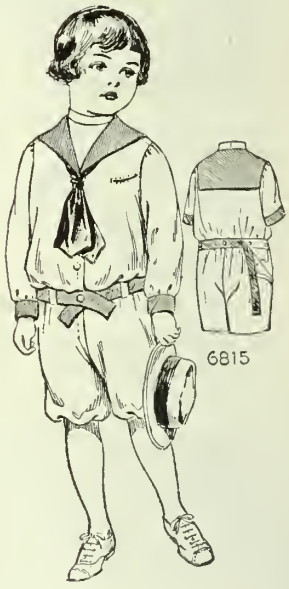
6815—BOY'S ROMPERS.

Such rompers as these actually form a suit, which may be worn without another beneath it. The front is cut in one with the drawers, but there is a division across the back at the waistline. The blouse has an open neck with wide sailor collar and an inner shield and standing collar, which may be omitted. The plain sleeves are long or short.

The rompers pattern, No. 6815, is cut in sizes 2 and 4 years. Medium size requires 2½ yards of 36-inch material, with ½ yard of 27-inch contrasting goods to trim.

This pattern can be obtained by sending 10 cents to the office of this paper.



6807—GIRL'S DRESS.

In this frock we have a novelty in the arrangement of the sleeve, which is in one with part of the body, producing a short jacket effect. The balance of front and back are plain, with the closing in

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the center of the back. The neck is round and trimmed with an ornamental collar, and the sleeve ends at the elbow. A wide girdle marks the waistline where there is no seam.

The dress pattern, No. 6807, is cut in sizes 6, 8, 10, 12 and 14 years. Medium size requires 2¾ yards of 36-inch material.

This pattern can be obtained by sending 10 cents to the office of this paper.

The Romance of Bee-Keeping

Continued from Page 24.

before, from the one hundred and fifty colonies the honey sales averaged $1,200 yearly. They extract only from the top supers; they take every precaution to get a quality product; someone always has an eye over the hives. It is a business of details, but the capital invested (exclusive of labor) is less than would be required in any other venture with the same possibilities on a mixed farm.

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Farmers in Canada often find it advantageous to keep in mind the Jewish holidays in order to meet the better prices for poultry that this special demand produces. Near the big cities this market is already of some considerable importance.

The New Year in the Hebrew calendar begins September 21 and 22—other holidays are: Day of Atonement, September 30; Feast of Tabernacles, October 5 and 6; Feast of Law, October 13 and 14; Purim, February 28; Passover, March 30; Feast of Weeks, May 19. The best market days in each of these cases begins about a week before these dates. The Jews want the very best fowls, and also they are put up in first-class shape. Good prices are generally realized.

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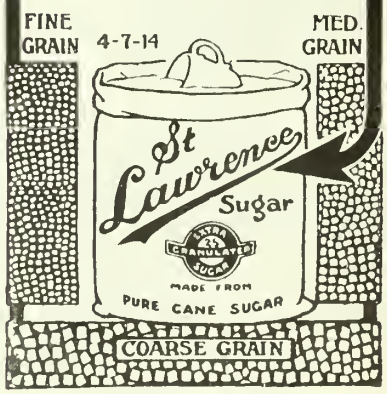
St. Lawrence Sugar Refineries, Limited, Montreal.



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National Affairs:

Three Years of Conservative Government

Continued from Page 30.

by the Dominions Royal Commission, which is taking evidence in Canada. As regards ocean traffic, too, new arrangements in regard to marine insurance have been made and it is hoped that if shippers will co-operate a Canadian Lloyd's may yet be formed. An actual reduction of insurance to the port of Halifax has also been accomplished. Measures have been passed to improve the pilotage service, define navigation rules, to make Canadian coasts and steamship routes safer by the establishment of wireless stations, lights and buoys.

Agriculture as the basic industry must always be an important legislative and administrative subject for any Government in a young and fertile country such as Canada. The Borden Government has devoted during the first three years of office, over 150 per cent. more of its revenues towards expenditures connected with agriculture than the preceding administration. Two important Acts of Parliament having to do with agricultural matters have been introduced in the three years, and both have passed with little opposition. One was the Agricultural Aid Act of 1912, which set aside half a million dollars to assist provincial Departments of Agriculture to improve and extend their work and to give to the farmers of their provinces the lesson of modern and scientific agricultural methods. Following the granting of this temporary assistance to the industry, Mr. C. C. James, former Deputy-Minister of Agriculture for Ontario, made an investigation and report as to agricultural conditions throughout Canada, the result of which was the introduction of the Agricultural Instruction Act of 1913. By this measure $10,000,000 will be distributed, mainly according to population, amongst the provinces during the succeeding ten years, this money to be used to increase the efficiency of agricultural colleges and other means of educating the farmer not only to make his living, but to live after he has made it.

Manufacturing has been fostered through the activities of the Trade and Commerce Department, which has established a system for obtaining information as to the possibilities of all the world's markets, and through the administration of the tariff. Without provoking controversy on this very controversial subject, let it be said that the present Government came into power on the policy of a reasonable protective tariff and that it has been consistent in its administration of customs' duties. Tariff assistance has been given to the building up of Canadian manufacturing industries where it has been demonstrated that it was necessary; for instance, provision has been made for the protection of steel manufacturers with a view to encouraging the

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manufacture of structural steel and wire rods in the Dominion. Yet on the other hand when cases arose where it was to the best interests of the Canadian people as a whole that the tariff should not be allowed to press too heavily on any one section of the community, duties were lowered. A notable example was the temporary reduction of the duty on cement during the building season of 1912 and the permanent reduction of the duty in May, 1913, to 10 cents per hundred pounds or less than the duty which was to have prevailed under reciprocity. The farmers of the prairies needed cement and the Canadian manufacturers were not in a position to supply it. And again in 1914, that the price of agricultural implements to the consumer might be as low as possible, consistent with the retention of their manufacture in Canada, a reduction in the protective tariff on these products was made.

The record of the present Government's accomplishments is wide in scope. It ranges from the revision of the Bank Act and the passage of the loan and trust company bills, all three measures designed to put Canadian commerce on an improved legal basis, to the reduction of the cable rates to the British Isles. It embraces the establishment of the Parcels Post, and the inauguration of a greatly improved mail service between Canada and Great Britain, and, in another sphere of Government activity, the improvement of Canada's militia system with the result that some 15,000 more men are trained every year in her active militia. It means, also, that for the first time in the history of Canadian parliaments, in the granting of railway aid by a Canadian Government a precedent has been set which calls for Government participation in the fruits of the enterprise to which it lends assistance. The reference, of course, is to the guaranteeing of $45,000,000 worth of bonds for the Canadian Northern Railway. In return for that service Canada receives forty per cent. of Canadian Northern stock, or almost a half interest in the whole road.

The Borden Government came into office during a year of normal prosperity. It is now carrying on its administrative activities during a season of that world-wide financial stringency and universal trade slackening, the periodic recurrence of which is an unsolved mystery of economics. Thus the Government in three years has passed through storm and fair weather and the best measure of its navigating ability is that the ship of state, after this severe test of its timbers, has been brought into port at the end of this period with a six million dollar reduction in the national debt of Canada.

These are the outstanding features, perhaps, of the three years of Conservative administration. Of course there is also the great silent routine work of Government departments, which goes on from year to year, under one administration or another. Time must tell that tale and its best record is found in the fact that least is heard of it, for good administration means few complaints.

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Vocational Schools for Children

Continued from Page 32.

ble-looking lot and what is most satisfactory about them, they are practically all going to be farmers. There are very few among them who intend to go beyond the school. As a matter of fact, but a small percentage would have been able under other circumstances to attend a college of agriculture and in putting within their reach an elementary course of training, such as that provided at Olds, the Province of Alberta is increasing the potentiality of its agricultural population very considerably.

The bringing together of the boys and girls in such a school is another good feature. Some there may be who disapprove of the idea of co-education, even in the mild form in which it exists in Olds, but there can be little doubt that the presence of the girls is going to be a good thing for some of the rough young country boys who are attending the school. Even during the few short months that the students have been there, the influence of the one on the other has been felt. Dancing has been encouraged. Skating parties on the school's rink, varied with carnivals and fancy dress events, have taken place. Athletic, literary and social societies have been formed and altogether steps have been taken to enlarge the horizon of life and show that the countryman and countrywoman are quite as capable of enjoying harmless pleasures as city folk.

The students themselves handle matters of discipline and have an organization for the purpose with president, vice-president and secretary. There being no residence and the boys having to board in the town, the hold of the school authorities must necessarily be slight and as a precaution an honor code is in force. When a student enrolls he is asked by the principal to give his word of honor that he will behave himself, which means that he agrees to be in his room studying from seven o'clock until bedtime, every night except Saturday or Sunday or when some event is taking place at the school; that he will not smoke, chew, drink spirituous liquors nor enter a saloon or bar whilst living in Olds and attending the school. If he agrees, he signs and is expected to live up to his promise.

It is the intention of the school authorities to retain the interest of students during the summer months by instituting experimental work, which each boy or girl can carry on at home. For instance it is hoped that a good many of the boys will agree to keep records of the milk-producing capacities of cows in their district, as well as to try experiments with various root-crops, etc. The staff of the school will also be kept busy in going through the district and assisting the farmers to solve any problem that may arise. Excursions will be run to the school during the summer and lectures given, illustrated by the work on the experimental farm. In this way the school will serve a double

purpose and will extend the sphere of its usefulness.

The school will be its own best advertisement and nothing that can be written about it will equal the force of the missionary work which its students will consciously or unconsciously do for it. A student went home for the Christmas vacation and carried with him some examples of work he had done in the blacksmith shop. These were shown to the neighbors and the lad came in for a good deal of congratulation on his prowess. One neighbor, who had been inclined to scoff at the school as an impractical, high-falutin, kind of place, was so impressed that he wrote at once to Principal Elliott to see if his son could not be taken in at the New Year. "I was really astonished when I saw David Salon's blacksmith work. . . . I think this is the best school a government ever established. . . . is really what the farmers want for their sons." With such testimony spread broadcast over the district covered by the school, it will be a wonder if there are not double the number of students in attendance next year.

Spanish Gold

Continued from Page 36.

It's a good job I hit hard. I wouldn't care to be scrapping in the dark with him. The old fellow gave me enough to do, and you're nothing but a damned coward, Langton. Now, we'll tie up the Rev. J. J. Meldon and gag him, so that he won't stir even if he comes to. When there's light enough we'll lower the two of them into the cave and leave them there."

"That'll be murder," said Langton, "and I told you I'd have nothing to do with murder."

"Don't be an infernal ass. There's no murder. Some fool or other will find them to-morrow or the day after, and they'll be alive all right. We must get a clear start out of this. Don't you know that the steamer would overtake us at once if she started after us? And she will if those two fellows are found and tell their story. Come and give me a hand."

Meldon's legs were tied together. His hands were lashed to his sides. A gag was forced into his mouth and secured.

"Now we have him safe," said Sir Giles, "even if he does come to. Let's get at the gold. We've no time to waste."

Meldon's head was a hard one. Very shortly after he was bound he recovered consciousness. He recognized Sir Giles and Langton and saw that they were stooping over the hole where the treasure lay. He saw them lifting out the coins and putting them into a leather handbag which lay beside them on the floor. He could recollect nothing of what had happened, but he grasped at once the obvious fact that old O'Flaherty was being robbed. He struggled at the ropes which bound his hands and feet, but found that he could not stir them. The gag prevented him from either speak-

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ing or crying. One form of activity alone remained possible for him. He rolled across the floor of the hut.

It is not easy to roll in a straight line towards any given object. The human body, like a biased bowl, has a tendency to turn on the hips as on an axle, and arrive ultimately somewhere near the place from which it started. But the distance which Meldon had to travel was not great. He succeeded, after convulsive efforts, in cannoning with some force against Langton. Taken completely unawares, Langton toppled forward, extinguishing the candle in his fall. A further effort upset the bag in the hole, and then Meldon followed it and fell, doubled up, on top of the treasure.

Sir Giles cursed vehemently. He stood up in order that he might curse with better emphasis. As a further relief to his feelings he kicked Langton, who still sprawled beside the hole. Then he went down on his hands and knees and felt about for the candle. The search drew from him other expressions of annoyance. Meldon, though his position in the hole was extremely uncomfortable, found a good deal of pleasure in listening to Sir Giles. At last the candle was retrieved and lit again.

"I'd better knock that infernal parson on the head again," said Sir Giles. "It's the only possible way of keeping him quiet."

"Don't; you'll most likely kill him."

"Nothing would kill that fellow. He wouldn't die if you hanged him."

"I won't have you smashing his skull anyway. Can't you take him outside the door and leave him there?"

Meldon was pulled out of the hole, dragged across the floor of the hut, and deposited on a bank of grass opposite the door. It was raining heavily.

"Cool yourself there awhile," said Sir Giles. "When it's light enough I'm going to drop you down into the cave that the treasure came out of. You and that damned old ragman can lie at the bottom of it and look at each other till somebody comes to rescue you."

Meldon received a good many bruises and scratches, but he retained his consciousness. He knew where he was. Below him was the end of the bohireen and the door of the hut. His mind was filled with a vehement rage against Sir Giles. He was totally indifferent to anything that might happen to himself. He desired intensely to do something which would obstruct, annoy, and, if possible, injure the man whom he regarded as a personal enemy. He hit upon a plan which seemed hopeful.

He writhed to and fro until he succeeded in rolling down the bank to the bohireen. By much wriggling he arranged himself across the path. His head was on the grass at one side, his feet on the grass at the other. He lay on his side with his face towards the door of the hut. He was extremely uncomfortable. A stream of water was running down the stony track. His body dammed it, and it mounted up against him, soaking him through. The wind blew more water against

the part of his clothes which the stream did not reach. A sharp-pointed stone stuck into his right shoulder. His face was cut and plastered with mud. His body seemed to be bruised all over. His head ached violently. But all this mattered nothing to him for the moment. His faculties were absorbed in watching the door of the hut.

Sir Giles and Langton appeared. They carried between them the leather bag, full almost to the bursting-point. Langton held the candle in one hand, but it was almost immediately extinguished by a gust of wind. Their eyes were not yet accustomed to th darkness. They took the first few steps cautiously. Meldon turned over on his face and waited, lying quite flat. He felt a foot touch him. He drew his knees up under him and arched his back suddenly. The stratagem was entirely successful. Sir Giles pitched forward and fell, dragging the bag from Langton's hand. It burst open and the contents were scattered broadcast over the muddy lane. Meldon, highly delighted, waited for the volley of oaths which was to be expected. He was disappointed. Sir Giles rose in silence. His anger this time was too fierce for blasphemy. He stood over Meldon and kicked him savagely on arms and legs and body. He was wearing rubber-soled yachting shoes, and his vengeance was not as ferocious as it looked. Missing Meldon once or twice owing to the darkness and his rage, he kicked stones and hurt his own toes greatly. Langton, who failed to realize the feebleness of the assault, protested.

"Drop that. Drop it, I say. Do you want to let yourself and me in for being hanged? If you leave the man in the middle of the path you've no one to blame but yourself when you trip over him. What's the use of behaving like a madman?"

"I didn't leave him here. He crawled here himself."

"Rot," said Langton. "He couldn't crawl."

"I'll put him somewhere this time that he won't get away from so easy."

He gripped Meldon by the feet and hauled him up the bank. He dragged him along the grass till he came to a wall. He called Langton to his assistance and between them they lifted Meldon over it and deposited him in a ditch at the far side.

"Get back over that if you can," said Sir Giles.

He kicked Meldon again. "So far," he said, "I've just had one solid piece of satisfaction this evening. I've stopped your talking with that gag. If I did right I'd cut your tongue out now I have you tied, so that you'd never be able to talk again."

Meldon listened. It annoyed him very much that he could not speak. He wanted to refer Sir Giles to the case, discussed by the historian Gibbon, of certain Christian martyrs, who spoke fluently and well after being deprived of their tongues by an executioner. He also wanted to say, that so far, working against long odds, he had got the better

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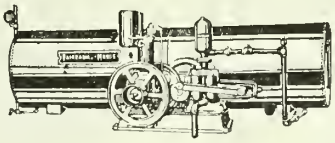

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of the struggle and had annoyed Sir Giles more than Sir Giles had annoyed him. He tried to give expression to his feelings by winking first with one eye and then with the other. But it was so dark that the winks could not be seen, and Sir Giles departed without knowing what Meldon thought of him.

CHAPTER XX.

SIR GILES and Langton went back to the lane and set about the task of hunting for the gold which had been scattered. They found the bag at once and in a corner of it a couple dozen coins. The rest were strewed about among the mud, the pools, the running water, and the loose stones. The wind tore across the island in violent gusts. The rain beat furiously upon them. The candle which Langton had put in his pocket was lighted and promptly extinguished. Sir Giles made a kind of shelter for it with his coat and tried to keep it burning. He succeeded for a minute or two. Then a gust of wind whirled over the coat and the candle was blown out again.

"Let's give it up," said Langton. "Let's go back and get another load."

"I will not give it up. Do you suppose I'm going to leave a small fortune lying in this lane when I might have it for the gathering? Go back to the hut and try if you can find any kind of a lantern."

Langton searched in vain, for old O'Flaherty owned no lantern. He returned to report his ill-success.

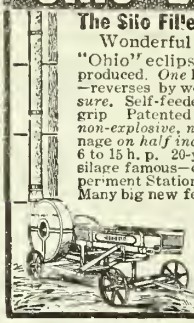
"I'll go down to the yacht," said Sir Giles, "and get one of her lamps. You wait for me here and pick up what you can in the meanwhile."

But Langton had no taste for crawling about on his hands and knees feeling for coins in mud and water. He was chilled and dispirited. When Sir Giles left him he stumbled back into the hut, wrung the water out of his coat, and waited in shelter. In about three-quarters of an hour Sir Giles returned with the Aureole's riding light in his hand. The search began again. After half an hour's hard work the bag was nearly filled, and, carrying it between them, the two men set out for the Aureole.

"Two more trips will be enough," said Sir Giles. "If we haven't got it all we shall have to leave the rest behind us. Thank the gods, the rain is stopping. The wind will go down now. If it doesn't, Langton, you may say your prayers. We'd never fetch Ballymoy or anywhere else in this gale."

Meldon lay in his ditch. The ropes with which he was bound began to cut into his flesh. He was more bruised than ever. But he found a real satisfaction in picturing to himself Sir Giles as he searched for the coins in the dark. He was determined to try and free himself. A few efforts convinced him that he could do nothing with the ropes on his arms and legs. The gag seemed more hopeful. It was a woollen scarf. It was forced between his teeth, pulled tight from behind so as to drag his lips

"OHIO" 1914 Model



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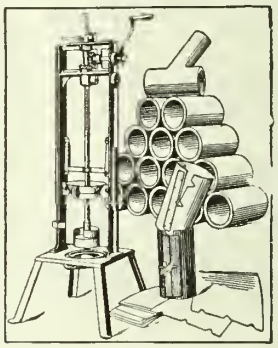

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out into a kind of grin and knotted firmly at the back of his neck. He tried to gnaw it through with his teeth, but only succeeded in biting the insides of his cheeks until they bled. He wriggled along the ditch and got the side of his head against a stone with a sharp edge. He worked his head up and down, rubbing the woollen gag against the stone. He hoped in this way to wear the stuff through. The work was tedious and painful. But he persevered and in the end reaped his reward. The last strands of the wool parted. His mouth was free.

He looked round him and took stock of his position. At first he could see nothing but the stone wall, the grassy side of the ditch, and the sky. He noticed that it was beginning to get light. The rain had ceased. The clouds were being blown apart. Meldon guessed that it must be nearly three o'clock. He remembered that Sir Giles intended to lower him into the Poll-na-phuca as soon as there was light enough. He had no intention of being buried alive there if he could help it. He set to work to writhe and wriggle himself out of the ditch. He found himself at last in the field below O'Flaherty's house. He had a clear view of the bay and saw Sir Giles rowing out to the Aureole. The light increased and he noticed with great satisfaction that there was a heavy sea running outside the bay. He reflected that it would be totally impossible for the Aureole to leave her sheltered anchorage. But the wind was falling. In a couple of hours a venturous man might attempt to run for the mainland with three or four reefs tied down in his sail.

Sir Giles and Langton left the yacht again and pulled for the pier. Meldon decided that they must still have another load of treasure to ship. They had, as he calculated, an hour and a half's work before them. He saw below him, two fields off, the house in which Mary Kate and her parents lived. He made up his mind that he must get near enough to waken somebody in it before Sir Giles came to him again. There was only one possible way of getting there. He must roll down the hill.

He made up his mind to act at once. Having the use of his mouth he shouted a word of encouragement to Thomas O'Flaherty before he started:—

"Hullo! Thomas O'Flaherty Pat! Hullo! I expect you're gagged and tied somewhere and can't answer. But I've got the beastly thing worked out of my mouth and I'm going to get the better of those two blackguards yet. It'll all depend on my being able to get hold of Mary Kate. Good-bye. I'll see that this business pans out all right in the end."

The field in which he lay sloped even more steeply than most fields in the island. At the bottom of it was a wall and in the middle of the wall a gap. Beyond the gap was another steep field and at the bottom of it was the house. Meldon aimed for the gap. He congratulated himself that Higginbotham's philanthropic plans for the bettering of the islanders' system of land tenure had not yet been carried out. In the fences

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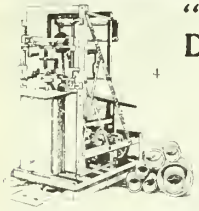

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that were to be erected there would not be gaps and no man could roll over a six-foot Congested Districts Board bank.

He wriggled himself into position and started rolling down the hill. He advanced rapidly for a few yards and then came to a dead stop, lying up and down the hill. He wriggled again, rolled again, and was again brought up short by the impossibility of keeping his body parallel to the slope of the hill. Still he advanced and at length actually arrived at the gap. He lay still, giddy and breathless. He saw Sir Giles and Langton go into the hut. He started, as soon as he could, to roll across the second field. There were four bullocks in it which were lying together in a group when Meldon rolled suddenly among them. They were startled, struggled to their feet and galloped off in four different directions. After a while curiosity conquered their terror. They returned cautiously and slowly, sniffing and pawing, starting now and then in fresh alarm. Convinced at last that Meldon was harmless they gathered close round him and eyed him with wonder. He lay quite still because he could see Sir Giles and Langton coming out of the hut and suspected that they would search for him. He realized that the cattle hid him effectually.

Having lowered O'Flaherty into the cave Sir Giles and Langton went to the ditch in which they had left Meldon. They were surprised to find that he had disappeared.

"Can he have got loose?" said Langton nervously.

"If he'd got so much as his tongue loose," said Sir Giles, "he'd have raised the hell of a row by this time. That fellow would no more keep quiet than a corncrake would stop making the vile row it does make in the middle of the night. He can't have gone far. We must look for him."

"No. Let's get out of this at once. The people will be awake and about soon."

"We ought to have been off two hours ago," said Sir Giles. "Only for that cursed parson we would have been. First we had to waste time dragging him out of the hut, and then his infernal practical jokes cost us another hour and a half. We'll have to leave him now and chance it. We can only hope he's lying dead somewhere."

Meldon watched them tramp down the bohireen and realized that he was safe. He understood also that he had very little time to spare. In half an hour Sir Giles would be on board the yacht again.

"He'll have to tie down three reefs" said Meldon to the nearest bullock, "if he doesn't want to be drowned. And that'll take him some time with nobody but Langton to help him."

The remark caused the bullocks to edge away a little. Meldon started rolling again towards the cottage. Now and then as he drew nearer to it he shouted. At length, when he had got within about twenty yards of it the door opened and Mary Kate peered out. Meldon shouted to her:—

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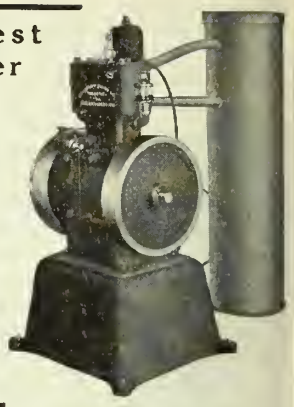

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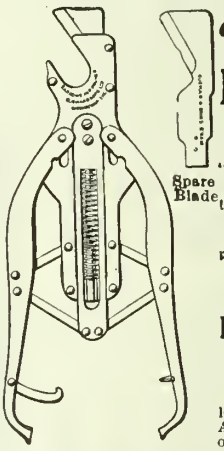

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"Mary Kate! I say, Mary Kate! come here as quick as you can."

The child approached him cautiously. Like the bullocks, she had never before seen anything exactly like Meldon as he lay in the field.

"Mary Kate," he said, in tones meant to be reassuring, "do you go to bed in your clothes?"

The question was reasonable. The child was dressed just as usual in her red petticoat and flannel bodice.

"I do not," said Mary Kate. "I dressed myself when I heard the shouts of you."

"Very well, then. Go and get a knife."

"A knife, is it?"

"It is," said Meldon. "A knife."

"What sort of a knife?"

"Any sort of a knife you like, from a scythe down to a lancet, will do. In fact, I dare say we could manage with your mother's scissors. But run now and get something that will cut."

Mary Kate went back into the house and returned with a sickle.

"My da will be wanting the scythe today," she said, "but if this will do you, you can have the loan of it."

"I don't want the loan of it. I want you to cut the rope that's round my arms, and be quick about it."

"The Lord save us and help us! Is it tied you are? Who's after doing the like of that to you?"

"I am tied. But if you'd stop standing there staring like a stuck pig, and come over here with the sickle, I'd soon be loose."

Mary Kate approached him grinning.

"Don't grin," said Meldon. "I've said that to you before. Look here, Mary Kate, I've been cracking you up all over the island the last three days for one of the most intelligent children I ever met. It was only last night I offered your grandfather to marry you if he liked. But I'll not marry you. And I'll never say another good word for you, and what's more I'll take the half-crown and the three sixpences away from you unless you come here and cut the rope."

"You couldn't," said Mary Kate.

But the threat produced its effect on her. She stopped grinning and began sawing at the rope. The sickle was blunt, but Mary Kate worked vigorously. One strand after another parted. Meldon got his arms free.

"Give me the sickle," he said.

His hands were numb and he was obliged to rub them up and down against his legs before he could take a firm grip of it. At last he managed to hold it, and set to work at the rope that bound his ankles.

"Mary Kate," he said, "go back to your da. Is he in bed?"

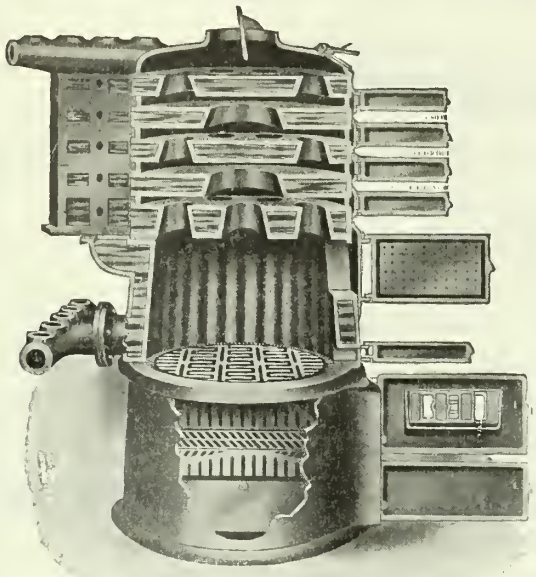
"He might, then."

"Well, if he is, get him out and tell him to go up to the Poll-na-phuca with a rope and a ladder, and he'll find your grandda at the bottom of it if he isn't dead."

"The Lord save us! They've took him at the latter end."

"Don't," said Meldon, "get any rotten idea about fairies into your head. This isn't a fairy matter at all. Tell your

The "SOVEREIGN" Hot Water Boiler is unapproachably efficient



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Do not finally arrange for the installation of your heating plant until you understand why you will be better off with the "Sovereign."

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SYNOPSIS OF CANADIAN NORTH-WEST LAND REGULATIONS

THE sole head of a family, or any male over 18 years old, may homestead a quarter-section of available Dominion land in Manitoba, Saskatchewan or Alberta. Applicant must appear in person at the Dominion Lands Agency or Sub-Agency for the District. Entry by proxy may be made at any Dominion Lands Agency (but not Sub-Agency) on certain conditions.

Duties—Six months' residence upon and cultivation of the land in each of three years. A homesteader may live within nine miles of his homestead on a farm of at least 80 acres, on certain conditions. A habitable house is required except where residence is performed in the vicinity.

In certain districts a homesteader in good standing may pre-empt a quarter-section alongside his homestead. Price $3.00 per acre.

Duties—Six months' residence in each of three years after earning homestead patent; also 50 acres extra cultivation. Pre-emption patent may be obtained as soon as homestead patent, on certain conditions.

A settler who has exhausted his homestead right may take a purchased homestead in certain districts. Price $3.00 per acre. Duties—Must reside six months in each of three years, cultivate 50 acres and erect a house worth $300.

The area of cultivation is subject to reduction in case of rough, scrubby or stony land. Live stock may be substituted for cultivation under certain conditions.

W. W. CORY, C.M.G.,
Deputy of the Minister of the Interior.

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father that if he doesn't go at once the old man will be dead, and as sure as ever he is I'll have your father hanged for murdering him. Do you understand me now,"

"I do," said Mary Kate.

Meldon found it difficult to stand, and was only able to totter down towards the pier. He saw Sir Giles and Langton reach the Aureole and board her. He quickened his pace as much as his numbed, stiff limbs would allow. He watched the mainsail being hoisted and noticed that the gaff was pulled little more than three-quarters way up the mast.

"Thank God!" he muttered, "they see that they must tie down some reefs. I'll do them yet."

He reached the pier. Realizing that the water was still rough, he turned from the Major's punt and went along the beach to Jamesy O'Flaherty's curragh. He launched it and took the oars. There was no need for him to row. The wind drifted him rapidly from the shore. Sir Giles and Langton were tying down reef-points in the flapping mainsail of the Aureole and did not see him. He headed the curragh for the Granuaile and climbed on to the steamer's deck. Everybody on board was asleep. As the readiest way of attracting attention Meldon began to ring the bell which hung amidships and to shout "Fire!" at the top of his voice.

A couple of sailors ran on deck and stood staring at him. Others followed them and began to ask questions. Meldon continued shouting "Fire!" and ringing the bell. He saw that Sir Giles had stopped tying reef-points and was hoisting the sail as quickly as he could. The Chief Secretary emerged in his pyjamas. Father Mulcrone followed him in a white cotton night-shirt and a pair of trousers.

"What's on fire?" said Mr. Willoughby.

"Nothing," said Meldon. "I wanted to wake you up, that's all. Send a boat at once and stop that yacht sailing."

"Why?"

Meldon's mind worked quickly. He realized that long before he could tell the story of the treasure and reply to all the questions which would necessarily be asked, Sir Giles would have got off. Already he could see that the Aureole's jib was being hoisted.

"Never mind why," he said. "Do it."

"I can't possibly," said Mr. Willoughby, "send a boat to capture a gentleman's yacht without rhyme or reason. It would, I imagine, amount to an act of piracy on the high seas. I'd do a good deal for you, Mr. Meldon; but, after all, I have to recollect that I am Chief Secretary for Ireland. Just fancy—the House of Commons—the newspapers——"

Meldon turned without listening to the end of the apology. He appealed to the crew of the Granuaile.

"Will any of you lower a boat and come with me?"

The men hung back, some grinning, some open-mouthed in blank astonishment. One glance at them convinced Meldon of the hopelessness of his appeal. He looked round him and caught sight of Father Mulcrone.

"Come along, Father Mulcrone. You're the only man in the whole crowd. Hop into the curragh as quick as you can."

"Give me time to tuck my night-shirt into my trousers and I'm with you," said the priest.

He crossed the deck and dropped into the curragh, Meldon followed him. Mr. Willoughby peered over the bulwarks of the Granuaile.

"Stop!" he shouted. "Wait! Hold on!"

The curragh shot out from the steamer's side.

"It's no good," said Mr. Willoughby, "they're off. I have always heard that the clergy did queer things here in the West of Ireland, but—I'm hanged if the other fellows don't seem as anxious to get off as the priest and the parson are to catch them."

Sir Giles and Langton, one at each side of the winch in the bow of the Aureole, were working with frenzied vigor to get the anchor up.

"He can't cut the cable," said Meldon to the priest. "Thank God, it's chain; the only thing on board the Aureole that isn't absolutely rotten."

"Pull away," said Father Mulcrone. "She's over her anchor now. He'll have it off the bottom in a minute."

Meldon pulled hard.

"He has it," said the priest. "Now he's hauling the jib across her to get her head round. Shove the stern of the curragh in, and I'll grab her before she gets way on."

The Aureole's head paid slowly round and the mainsail began to draw. In obedience to a violent tug at the oars the curragh spun round and her stern struck the yacht amidships. Father Mulcrone gripped the weather bulwarks with both hands. The curragh swung alongside and was dragged stern first through the water as the yacht gathered way. Sir Giles left the tiller, sprang across the deck and began hammering at the priest's hands with his clenched fists.

"Let go," he yelled; "let go."

He stood up and kicked at the priest's hands. Then he trampled on them, still yelling, "Let go." Father Mulcrone held on. Sir Giles kicked at his face, holding on to the weather runner to preserve his balance.

"Let go or I'll brain you."

Father Mulcrone held on. He was not the kind of man who lets go. Mr. Willoughby had discovered this about him when dealing with the question of seed potatoes for Inishmore. Meldon scrambled on board the yacht. He came on Sir Giles from behind, seized him by the shoulders, swung him round, rushed him across the sharply sloping deck, and flung him overboard.

"Let go now," he shouted to Father Mulcrone, "and pick up the fellow I've pitched into the sea. He may be able to swim or he may not. In any case you'd better look after him. I'll manage the other man and the yacht."

Langton sat dazed and helpless in the cockpit, holding the end of the mainsheet in his hand. Meldon snatched it from him and seized the tiller.

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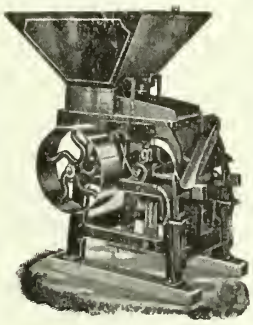
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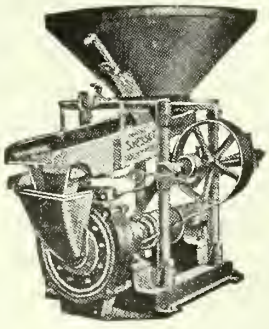
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"Loose the jib sheet," he shouted, "and let me get her sailing."

Langton did not stir. Meldon dropped the tiller, ran forward and loosened the sheet himself.

"If you stir hand or foot," he said to Langton, "I'll pitch you into the sea. I don't believe you can swim, whatever Sir Giles can do. Ready about now, and mind yourself."

The yacht swung round and flew off on the new tack. The half-reefed mainsail bellied ridiculously. The water rushed green along the deck and foamed over the coaming of the cockpit. Meldon, a light of triumph on his face, stood up and looked round him.

Father Mulcrone had Sir Giles in tow behind the curragh and was pulling for the shore. It is difficult to get a swimmer into any small boat. It is totally impossible to get one into a canvas curragh. The priest had gone as near rescuing Sir Giles as was possible under the circumstances. A boat was lowered hastily from the Granuaile and the Chief Secretary, still in his pyjamas, got into her. She was pulled towards the curragh. A small group of islanders, men and women, stood on the end of the pier. Major Kent was awake and watched the exciting scene from the deck of the Spindrift. The Aureole ran under her lee. Meldon threw his boat up into the wind and hailed the Major.

"Hullo! Everything's all right. I've got the treasure safe here. I always said I would and I have. I'll send Father Mulcrone off for you as soon as he's done rescuing Sir Giles."

The Granuaile's boat reached the curragh. Sir Giles, spluttering sea-water and curses, was hauled on board. Meldon, having got the Aureole on the third tack, flew past them and shouted—

"I say, Father Mulcrone, just put back to the Spindrift and bring Major Kent ashore. It's a pity for him to be missing all the fun."

A little group of men came down the hill towards the pier. Among them, supported by his son-in-law and a nephew, was old Thomas O'Flaherty Pat. In front of him, dancing with delight and excitement. her hair blown wild with the wind, went Mary Kate.

Meldon's tacks became shorter as he neared the land. The men on the pier cheered him each time he passed them. He waved his hand in response, and, when that seemed an inadequate acknowledgment of the enthusiasm, took Langton's cap and waved it. The Granuaile's boat reached the pier and was greeted with more cheers. The people of Inishgowlan, not yet aware of what had happened, were ready to cheer anybody. The Chief Secretary, stepping daintily, for he was barefooted, went on shore. Sir Giles, dripping and dismal, followed him. Meldon made his last tack and beached the Aureole close alongside the pier. The islanders and the men from the Granuaile's boat ran to him with offers of help. Meldon gripped Langton by the collar of the coat and lifted him over the side of the yacht into the water.

To Be Continued.

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Dairying in Nova Scotia

Continued from Page 10.

to the lack of succulent feed, advanced cost of mill feeds, the deterioration of hay and other coarse forage, and also the changeable weather conditions. The three months preceding these are also expensive. To counterbalance this, prices for dairy produce are highest and most steady at this period of the year. The cow produces with the greatest profit in June. When she is turned on grass she has sunshine, abundance of fresh water, and succulent food, with proper nutriment in it for the production of milk, and unless we carry these conditions into the stable, providing her with comfortable, well-ventilated quarters, sunlight, sufficient water and bulky, succulent, palatable, nutritious food, we can not expect economic milk, cheap wintering of young and dry stock or healthy animals.

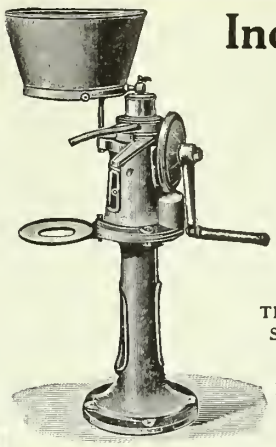
FRESH AIR, LIGHT AND WARMTH IN THE STABLE.

All dairymen agree that fresh air, light and warmth are essential to animal health and therefore that these requisites must be kept in mind when building the dairy stable. It does not matter whether a stable is made of brick, stone or wood provided certain conditions can be maintained at a minimum cost. Whether the storage room and the stable shall be under the same roof, or the stable in an annex, is, I believe, more a matter of individual preference than of importance.

The barns of Nova Scotia are generally rectangular in shape and varying in size from 20x40 to 40x80 or thereabout, with one or two driveways running crosswise at a height of from three to six feet above the ground floor. In the single-floor barn there is usually a hay mow on one side of the driveway and a stable on the other side, or as is sometimes the case the stable is in a lean-to along the back. The barns are built of wood, as it is cheap. Wood can be used with less skilled labor and most farmers have their own supply. As it is a poor conductor of heat and cold wood makes a warm wall and is entirely free from that damp chill feeling which is noticeable when stone or cement is used.

That the readers may have a fair idea of perhaps the prevailing type of barn in Nova Scotia, I am submitting a plan of my own barn. The design seems to meet the needs of the farmers of this province. It is possible that the sketch may aid a reader who is endeavoring to solve the stable problem. My stable is always dry, bright and clean. I am not in favor of basement stables. I have found them, as a rule, damp and unhealthful for man and beast.

My barn is 104 feet long by 45 feet wide. There is a raised walk behind the cows. On this is hinged a continuous row of clappers or trap dors about 14 inches wide. When a trap-door is closed it forms one side of the gutter; when raised, the manure may be shoveled down into the basement with a square-mouth



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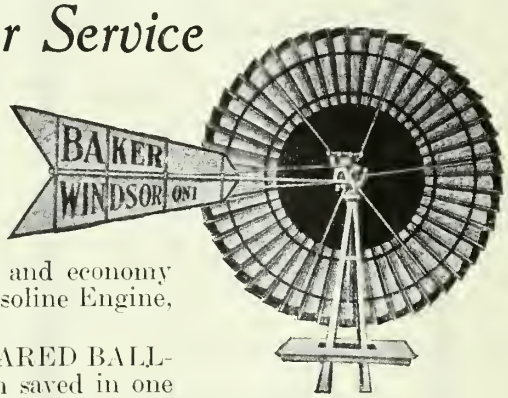

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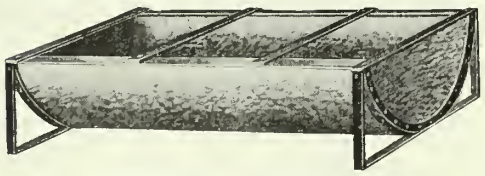

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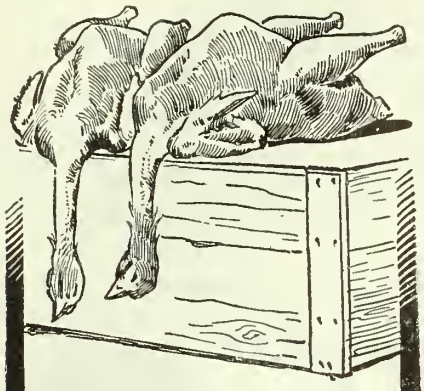

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shovel almost as fast as one can walk. The horse stable is in the east end.

The barn doors are 14 feet wide so that a pair of horses can be taken through beside a load of hay to put on the rope. The root cellar is between the two barn floors, 4½ feet below ground and 4½ feet above. The roots are thrown in from each floor through good-sized doors and are taken out in front of the cows. Young stock are kept in boxes at the west end of the stable. These boxes are cleaned out by raising a trap door or hatch. One hatch is used for two boxes. Hay is stored over the horse stable and over the root cellar. The distance from scaffold to hay track is forty feet and sufficient hay for fifty head of stock is stored. Grain and straw are kept in the west end.

The windows are long instead of high, and the sunlight has full play on all the animals. The cow stable faces the south. The windows are so arranged that there are no shadows. Hay is fed from both barn floors.

The markets for dairy products in Nova Scotia are exceptionally good. Farmers in the west of the province are obtaining an average of twenty-eight cents a pound for their butter all the year round. Dairymen near any of our industrial towns sell milk at from eight to ten cents a quart and butter at from twenty-five to forty cents a pound. Hog-raising is found to be a profitable adjunct to the dairy business. The writer knows of several herds of dairy cows in Nova Scotia upon which a profit of $40 to $100 per head is being made according to the manner of marketing the product.

Soft Roasters For Spring

A Profitable Branch of Poultry-raising that is not Generally Practised

D. J. LAMBERT, writing in the *Country Gentleman*, says there is one branch of poultry-raising more profitable than any other and yet generally neglected. It is the production of fall-hatched soft roasters. Soft roaster chickens are those which have been so fed and reared as to keep their muscles soft, their flesh tender and the end of the breastbone pliable. This kind of chicken usually weights from three to eight pounds, with capons growing to ten or twelve pounds before they need be marketed.

The best time to hatch chickens for soft roasters is in September. This means that the eggs must be put to incubation, either in machines or under sitting hens, during August. Chickens coming out of the shell at this time of the year escape the hot, muggy days and arrive at the beginning of the cool autumn nights. They come after the rush of summer work, and begin to eat and grow when all kinds of grains and seeds are ripening, when bugs and earthworms are abundant.

September and October are the two best months in the year to start chickens, especially in the New England, Middle Atlantic and Ceneral states. Weather conditions are generally favorable for rapid growth, causing the chicks to feather well before winter sets in.

To produce prime roasters we must have choice stock from which to get eggs for hatching. The breeding stock must have strong constitutions, plump, well-rounded bodies, full breasts, broad backs and big feet. In the language of the hen men, they must be stocky, big-boned, yellow-shanked birds.

Plymouth Rocks are favorites for any kind of table poultry. They are ready for market at any age after eight weeks, will remain tender and grow to large size, with the flesh fine-grained and generally yellow. Some prefer the Wyandottes, although they make small roasters. Others claim that there is nothing equal to a Light Brahma. No matter what breed or variety you choose, the chickens should be all of one kind for the sake of uniformity at every stage of growth and for the sake of appearance when marketed.

Two-year-old hens are best breeders. They do not start to lay as early as pullets and generally continue later in the summer. Their eggs are larger, will hatch better and the chicks will be stronger than from younger females. Ten or twelve of these two-year-old hens, mated to a strong, vigorous male, should produce at least eleven or twelve dozen strongly fertilized, hatchable eggs during the three weeks prior to filling the incubator, providing, of course, they are given good care, the right food and liberal range.

CATER TO THE CHICKS COMFORT.

Do not use for incubation eggs that were laid by hens cooped up in small, bare yards, or from ill-fed, immature, diseased or neglected stock. It is easier to brood chickens successfully in early fall than early in the spring. If hens are used as mothers they can be housed in groups of four and given twelve to fifteen chickens each. In this case care must be taken that all the chicks are of the same size and color. It is best to confine each mother in a small, slat-fronted coop about the size of a cracker box, so the hens are separated while the chickens have the run of the entire house.

After the chickens are a week or ten days old they should be allowed their liberty in the open air, with or without the mother hens. They should be left with the hens, or if under hovers the heat should be maintained, until they are fairly well feathered, which is usually from four to six weeks according to breed. For artificial brooding use hovers advertised to accommodate from 75 to 100 chickens, locate them in one corner of the 10-by-10-foot portable house with the lamp box out-

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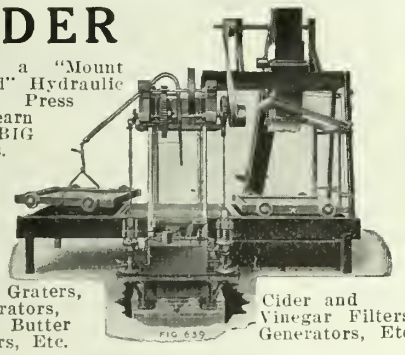

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side, and put them 40 to 50 chickens under each.

With a sufficient number of houses the sexes can be separated at six weeks of age, and from 25 to 30, either all cockerels or all pullets, reared in each house. It does not pay to crowd live chickens at any time. If the weather is wet and cold as the chicks approach weaning age delay separation for a few days and retain the heat under the hovers. Watch the actions of the chickens and try to keep them clean, comfortable and contented. After eight to ten weeks the cockerels must be separated from the pullets in order to rear them soft and tender.

Commercial chick feeds have reduced the amount of labor formerly required to supply the varied wants of baby chickens. Some of the best ready-mixed chick feeds are composed of finely cracked, sifted, kiln-dried Indian corn, cracked macaroni, wheat, cut oats and broken rice. It is best to buy grit separate. Steam-cooked rolled oats make a good alternate feed, handy to use and easily digested.

To hurry the young chicks along after they are two or three weeks old, give one moist mash daily—all they will eat up clean within ten minutes—preferably in the latter part of the afternoon. This mixture should be composed of equal parts of ground grains, such as bran, cornmeal and sifted ground oats, mixed with sour milk. In the absence of milk use water and add a small amount of animal meal or beef scraps, increasing the amount as the chickens grow larger and stronger until the meat portion of the mash is at least twenty per cent.

As the chickens approach marketable able age the proportion of cornmeal should also be increased for fattening, and the bran decreased. A small amount of salt and pepper should be added. Sugar is sometimes fed in the moist mash the last two weeks, a little at first, increasing the amount as the chickens learn to like it. No doubt sugar would be injurious to hens kept for eggs, but it is a good fattening food for chickens that are being prepared for market.

PULLETS BRING PREMIUM PRICES.

As long as moderately cool weather continues the chickens will do best on free range or in large yards, roosting in houses largely open on the south front at night. If the location is sheltered this may be continued until snow flies. When the ground is frozen and there is ice all poultry will do better if kept under cover, in a house or shed. Roosts or perches need not be provided for these soft roasters; in fact, it is better to let them crouch and sleep on beds of straw or dry leaves.

If these growing chickens are well fed every day and properly cared for they will reach marketable age in prime condition. Good soft roasters are never too fat. This "butter fat" condition is never brought about by neglect early in life and liberal feeding later, but by careful selection of the breeders and of eggs for hatching and by feeding well from the shell up.

By the latter part of March or first of April the previous spring and summer

Handling Hens for Market Eggs

For best results in Winter-laying Pullets should be secured that have been hatched early and are well matured by the 1st of October. This is a great essential in winter egg production with any variety of fowl.

Young hens during their first winter lay quite rapidly through very severe weather if conditions and food supply are congenial. It is necessary to keep plenty of nourishing food before your layers. To get best results fowls should eat about one-half as much mash by weight as whole grain. Regulate proportion of ground feed by giving a light feeding of grain in the morning and about all they will consume at the afternoon feeding. It is a good plan to go into the coop after dark at night when the hens are roosting and scatter the grain among the litter on the floor so that they can find it first thing in the morning. If you give them a chance they will be working long before you are. The afternoon feeding should be given in time so that they can find it all before dark. It is well if your fowls lay heavily to restrict both morning and night feeding to induce a heavy eating of the dry mash. Gunns' Shur-Gain Poultry Mash for laying hens is an ideal balanced ration. Fed with our Shur-Gain Scratch Feed for hens in the manner described, it will get you the very best results. This ration should be supplemented with beets, cabbage, sprouted oats, green clover and other succulent foods unless they are running on a green-covered range.

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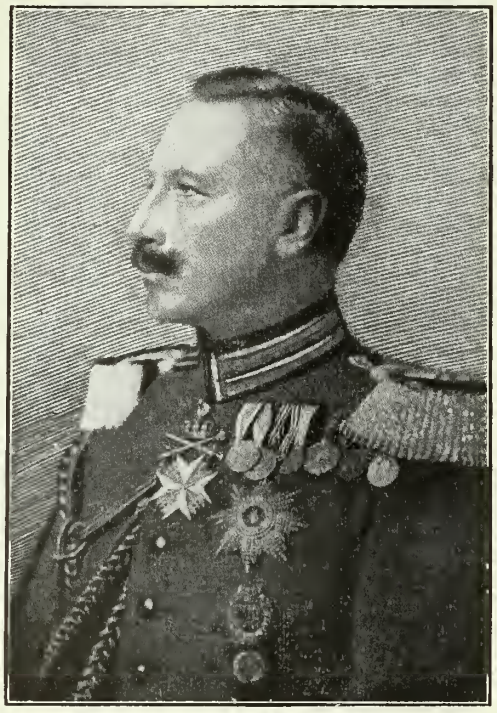

Emperor William of Germany.

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hatched chickens have either been all killed, sold and eaten, or they have become too hard for roasting. It is then that our best markets call for these soft, September-hatched birds, and they sell quickly, alive or dressed, wholesale or retail. They bring better prices then than at any other season of the year.

Pullets will mature and be ready for market before the cockerels. When intended for meat they should be sold just before they deposit their first egg. Many epicures prefer these fattened pullets to the cockerels and will pay premium prices for them. Near the cities this is generally 30 cents a pound on the foot or 35 to 40 cents a pound dressed. Of course these pullets would lay if kept for that purpose, but their eggs are generally small and the hens never make desirable breeders, hardly ever reaching normal size. Good breeding stock is best hatched during the spring months and should be fed more nitrogenous food than chicks intended solely for market.

There are eight essentials for success with soft roasters:

First. Secure strongly fertilized, fresh-laid eggs for hatching, from meat-type hens mated to a strong, vigorous, short-shanked, broad-backed, full-breasted male —one that crows often, loud and long. The breeding flock should have free range a part of every day or a large, commodious yard with plenty of grass.

Second. Have your incubator or some trusty sitting hen ready several days befor starting to incubate the eggs. Some poultry-raisers use both the hens and the machine for hatching and then brood all chickens with the hens.

Third. Clean, sanitary colony houses should be ready for occupancy of the hens and chickens or the brooder installed before the chickens are due to hatch.

Fourth. Grass runs, with a liberal provision for range on fresh or renovated soil, should be provided at all times from the shell to the winter season.

Fifth. There should be a sufficient number of houses in order to separate the sexes and give all plenty of room.

Sixth. Chickens of all ages should have good care and plenty of food every day. Good care includes clean quarters; plenty of food means all the chicks will eat up at regular intervals, with a liberal supply of pure drinking water at all times.

Seventh. A market should be secured so the roasters can be disposed of as fast as they ripen, the cockerels when well filled out, and the pullets when on the eve of laying.

Eighth. It is necessary for the operator to have a working knowledge of incubation, brooding and the care of chickens, coupled with a fair amount of common sense and some "sand."

With these essentials there is no reason why fall-hatched soft roaster growing cannot be made both pleasant and very profitable to the grower.

Between Ourselves

A Question Drawer for Home Readers

By GENEVIEVE

RE-DECORATING AND FURNISHING.

Q.—We are planning to make our parlor into a living-room. It is a good-sized room with two large windows which face toward the east and south-east, so it is fairly bright. We do not want to buy any more furniture than is necessary. The parlor suite is haircloth, as good as new, but gloomy looking. Is there anything we could do with it, and how would you advise decorating the walls and finishing the floor which is not hardwood. We want to have the carpet made into rugs? I have an idea that I would like to have pale mauve or heliotrope on the walls. Could this be worked out with good effect?

Mrs. H. R. B., N.S.

A.—A pale heliotrope decoration could be made very effective in combination with yellow. Any of the purple shades alone are too depressing for a living-room. You could use a good quality of plain or pebbled paper with a cream ceiling and a deep frieze of yellow crysanthemums or massed floral design above the moulding. Or with the same border the walls and ceiling could be done with a flat paint (one giving a soft, dull finish). Then inside the cream or white window-curtains of heavy net, I would have shadow curtains of yellow washable material. They cost little and add a great deal to the cosiness of a room. If the woodwork is to be painted I would use white enamel with light mauve walls, and as you want the room to be a real living-room a white enameled library table could be brought in. The ordinary little kitchen table costing two or three dollars would do very well. Be sure to give it several coats of paint to get a good hard finish, and then just use a washable scarf across it, widthwise.

A good way to treat the floor is to make a crack filler of cement and glue. Get the pulverized glue, melt it in hot water and add dry cement until you get a consistency about as stiff as a mud pie. Using a stiff knife, fill the cracks with this and it will never come out. When it hardens smooth off with sandpaper and apply the ground color, following with a varnish stain and graining it with a regular graining comb as you go along. When this dries finish with two or three coats of varnish. This sounds like more work than it really is, and the finish is handsome and durable.

The "gloomy" appearance and also the slipperyness of your haircloth chairs and sofa could be overcome by covering the upholstery with art sateen, preferably of light grey with yellow flowers to correspond with the wall border. You will, of course, use the carpet you have for making the rug. If buying a new one a grey ground with some yellow in the pattern would harmonize well with the rest of the furnishings.

DAHLIAS AND GLADIOLI.

Q.—(1) Can you tell me what causes dahlia blooms to drop off almost as soon as they come out? No insects can be found on the plants.

(2) Is it better to plant gladioli bulbs, or seed?

(3) What month would you advise separating the roots for bulb planting.

R. J. S., Ont.

A.—(1) Dahlia blooms have been known to be eaten off by beetles that feed only at night. Dusting the flower stems and leaves with pyrethrum powder or dry soft coal soot is a good preventative. Extreme heat or dryness at the roots will often injure dahlia blooms in the way you mention.

(2) It is better to plant large cornes (bulbs) of gladioli for flowering purposes rather than seed. Growing them from seed for flowering purposes takes four or five years to produce flowers. Cornes one and one-half to two inches in diameter should be planted to secure flowering results.

(3 I presume the Dutch or spring flowering bulbs are referred to in this question. Bulbs that have been crowded in clumps or groups in the border should be dug up at any time during August, the bulbs separated and planted again at once. Or the bulbs may be dried out of doors a little and placed in a cool cellar until October, and then planted. These bulbs should be divided and transplanted when they are dormant—before they start to root in the fall.

I have this information from Mr. W. Hunt, of the O. A. College.

THE COUNTRY GIRL IN TOWN.

Q.—I have to prepare a paper for our institute on the subject, "What a Country Girl Should Know Before She Goes to Work in the City." I see that others write to you for help with institute papers and would be much obliged for a few points on this subject. Mrs. C. W. E., Ont.

A.—This is a big subject, and one worth a place on the years programme of any Women's Institute. I would emphasize the following points: (1) Before going to the city to earn her living, a girl should have a training for some specific line of work that will bring her a living wage. The inexperienced girl who has to enter the unskilled labor market has rather a hopeless proposition. (2) She should have some definite employment arranged for before she comes to the city, or some person who will be responsible for her until she gets a position. (3) She should know where she is going to stay for the first few days at least until she can get a proper boarding place and if possible should have some reliable person to help her find a room. This is most important. By writing previously to the local Council

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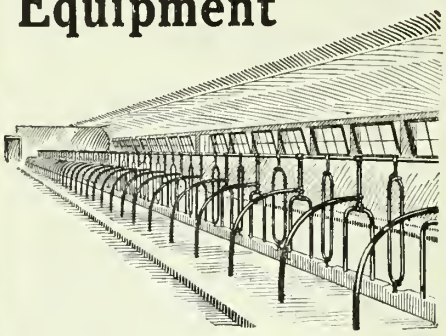

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of Women in the city, a list of reliable boarding houses can usually be obtained. As there are many (unfortunately too many) girls coming from the country to find work in town, it would seem a good plan for the local Council of Women and the Women's Institute to co-operate in this matter, the former keeping the superintendent of institutes supplied with bulletins giving particulars in such matters for the benefit of country women coming to town. (4) This system might also help in getting the girl introduced to congenial people, and into a church of her own denomination; then she can't drift. It is almost incredible the number of girls living in boarding-houses who are lost for some time, before anyone knows about it, or until it is impossible to trace them. (5) Any girl, whether she is to live in the city or in the country should not be kept in ignorance of the social dangers that she may meet anywhere (I would refer you to the article, "How About Your Daughter?" by Mrs. Kepper in this issue). At the same time she should know that there are very few people who do not want to be decent. It is her business as a woman to help them. We will take it for granted that she has a good moral training. She must also know that little breaches of propriety that may have been overlooked at home are not to be tolerated among strangers. (6) The country girl coming to the city, after watching the usual dress procession on the business streets, is likely to think her clothes away out of date, and to buy some imitation freak at the ready-to-wear counter. Nothing misrepresents her character, or marks out her inexperience more quickly. A knowledge of how to dress well and economically is an important part of her preparation for the city.

And in discussing this subject I would certainly not leave it without bringing before the members of your society the importance of making the country home and locality such that more girls will want to stay there. Of course, where it is clear that her opportunity for development in the line of work for which she is naturally fitted, lies in the direction of the city, that's a different case altogether. A way of earning money at home would keep a great many girls there.

Lure of the West

Continued from Page 14.

natural selection strains out the weak, indigent and faint-hearted before the goal is reached—before the start is made at all in fact. As a rule, only persons of substance, strength, courage and self-reliance venture into a new northern country so far in advance of the railway, and if weaklings do set out they generally turn back.

Such, then, is the foundation stock by which this great province of the future is being pioneered. Of the resultant issue to be anticipated, let Thompson Seton speak. Writing in his book, "The Arctic Prairies," after a summer spent in the Northland, including a trip of observation

into the caribou and musk-ox region far north-east is the miscalled Barren Grounds, he summed up his conclusions tersely thus:

"The giant races of America were from the North-West Buffalo plains and from Patagonia The giant race of Africa is the Zulu of the Cape; and the dwarf races the world over are from the tropics, where they are over-hot, or the poles, where they are under-fed. The highest product of civilization we believe to have been the white man of Northern Europe—a product, indeed, of the snow. This should help us to forecast the future of the North."

Agriculture in War Time

Continued from Page 6.

troduces new influences. The way that forces will react under it is problematical, even to the shrewdest political economist.

It would appear, however, that after the first shock is over and as ocean shipments become safe, that trade with the warring countries will redound to a great enhancement of agricultural prices in all America. The lessened production of these European combatants with the waste and dislocation that have now taken place, will open up markets for Canadian and United States goods. The Argentine has practically shut down on export of wheat and corn this season. Russia will not send out very much.

Great Britain and Ireland for the twelve months ending March last, imported wheat from the following countries:

Argentine	$11,885,600
Australia	11,228,759
British East Indies	15,882,600
Canada	23,082,545
United States	33,472,857

From Russia, Great Britain obtains $11,000,000 out of her total of $21,000,000 of eggs.

The United States had a total European trade last fiscal year of $700,278,042 in imports and $1,208,540,019 in exports.

Their trade for the nine months ending March last by the leading countries was as follows:

Country.	Imports.	Exports.
Austria-Hungary	$ 15,480,395	$ 18,000,533
Belgium	30,031,408	48,401,216
Germany	143,952,718	290,417,563
Russia	16,387,223	23,839,581
Great Britain	700,287,042	$1,208,540,019

"There is little doubt," says the *Financial Post*, "that the interruption of Germany's trade for even a short time would have the effect of booming industry on this continent and in Great Britain. It is worth noting that the chief import trade of the German Empire is with Russia on the one hand and with the United States on the other. Practically all the countries of the world help to supply the raw products of the German factories."

In 1913 Germany imported foodstuffs and agricultural products to the value of $1,800,000,000. Germany is, therefore dependent for a great deal of her foodstuffs on outside places.

Little Belgium, which has been so mercilessly overrun with the armies of Europe, had a total trade with Canada last year of $9,310,969. Canada's trade with Germany showed a total of $19,019,959. The chief items of this latter trade were apples, wheat, flour and agricultural machinery.

What effect will it have on Canada's prices and farm lands now? This would be a reckless guess for even the wisest amongst us. So many things are happening and are likely to happen, that results may come as unexpected as was the declaration of war. However, it would appear as if all farm products in Canada are bound to rise in price. Farm lands will not, we think, advance in value to any great extent for several reasons. Wheat, pork, beef, oats, barley, poultry products, dairy products and breeding stock of all kinds of livestock will likely feel the increased demand as soon as the trade routes get fairly active again.

Our banks can well afford to curtail no operations that will stifle the fitting of animals for market. Feeding operations will this winter be hampered by short money and the high prices for feeds, which facts will likely tend towards keeping meat prices high.

Farmers are now holding their wheat, we are told by an Ontario miller and the millers are importing large quantities of the United States fall wheat crop. For farmers to refuse good prices will be absurd policy. A good price should satisfy anyone and it will greatly help trade and commerce to recuperate.

No better advice can be tendered nor accepted by any producer, than to lay to and produce all he can along the wise lines which skilled agriculture has already blazed for him. High prices may come and tempt a hoarding of these supplies, but like the farmers in Crimean fat times, some may hold out for even a greater figure than $2 a bushel and have to accept half that figure later. A good price is always a good thing to accept.

Building Up Farm Reserves

Continued from Page 18.

it, and for this reason the mineral constituents of the soil will not be available. Further, unless there is a liberal margin of land above the soil that is saturated with moisture the root system has a tendency to become shallow. Crops that are handicapped for this cause fail when the inevitable dry summer spell arrives.

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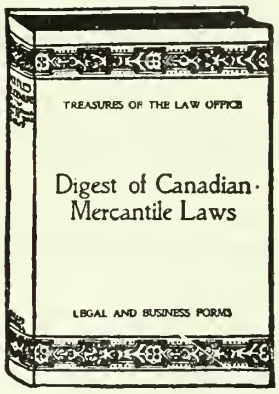

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tion of details that is demanded by agriculture. The farmer who allows his range of interests to become so narrow that he does not watch all the known factors that contribute to his prosperity may as well be prepared for trouble and loss. Basal to all that he does, however, is the soil. Unless he is on the alert in this particular he is bound to fail. Should his fields become barren or fall below a paying standard of fertility, there is no hope for him as an agriculturist. If his fields be fertile he may face his financial future with confidence.

Convenient Stable Plan

The Essential Features are Double Stalls Readily Converted Into Box-stalls, Self-feeding Hay Chutes and Slat-bottomed Mangers

L. OGILVY writing in the *Breeder's Gazette*, gives the following valuable information about the planning of a convenient stable. He says: In planning the type of stable which has been of extreme value to me, it does not make any difference whether there is a feed alley and a double row of horses or a single row, except for convenience. The stable can carry feed enough and the hay chute can lead from the hay barn. I have a twelve-horse stable. As a matter of fact I would build it only for eight, leaving the third stall for grain box and tools. If I wanted more room I would double it for sixteen horses with the feed alley between.

This stable can also be used without any loft, and one can feed from an alley, throwing in the hay from either end if desired. The horses may eat from either side of the hay chute, a very important matter with alfalfa since it otherwise becomes clogged. If one horse goes out and the remaining one is turned loose he can feed from either side. The grain boxes are as long as the hay chutes are deep from the front, that is, about three feet. This lets the grain spread on the bottom, and prevents a horse from bolting it. There is room for a big lump of rock salt. There is no bottom to the hay manger. Below the chutes F and G are two strong planks filling most of the space, and holding such hay as is pushed from the chutes, but not the dirt and dust. Horses do not cut their manes reaching under the chute and around the angle.

Under the manger as much straw is stuffed as possible. When the stable is bedded this straw can be drawn back as needed or the horses will work it back. In winter when only a few horses are kept, one of the stalls can be used for straw. Personally I would put the extra stall in regularly for straw, as shown in the drawing. It is no trick to carry the straw from one end of the stable to the other with a barley fork, and one can fill through either of the doors in the end stalls. These doors should be four feet in the clear with room enough for one or two horses, so as not to jam them in the doorway. If there is a corral at either end or in front of the big door, it is very easy to turn the horses loose for water or exercise. I have water in the centre stall or alley.

This stable makes no provision for kicking horses unless they are put in a whole stall by themselves, but kickers with me wear a short chain on one or both hind legs, which somewhat modifies their ardor and gives them a good dressing down. A bale can be arranged in the centre if deemed advisable. However with horses to be harnessed in the stall while eating, or during currying, I part the double stall. This plan enables kickers to be kept up in comfort during the night, while the rest have the range of a quiet corral. This may not be the best stable, but it suits me and lessens work very much while increasing the horses' comfort.

To tie old horses I use neck collars, leaving halters off entirely. If these are made of heavy leather and the corners rounded I find that they do not cut their manes. If a horse is hard to catch one can catch him with the six-foot end at pasture or in the corral, and lead him in with the halter strap. They are not suitable for colts because they do not understand them.

The best harness hooks that I have ever had were old wagon tires, the worn side up. They have a long surface bearing against the shed, and one can pile a lot more harness on them than there should be in one place. In fact, one would be surprised at the amount even if they only project six or seven inches.

A House and Yard for Show Birds

An Amateur's Success With Silver Wyandottes

ONE amateur in rearing poultry for exhibition purposes, achieved success by first finding out the best methods and breeds for his purpose and then starting in with a well-planned arrangement for housing the stock. In selecting the special breed of bird to be kept, the ornamental as well as the useful was kept in view, and Silver Wyandottes were purchased for their practical and ornamental qualities, the hens being yearlings and the cockerels about eight months old.

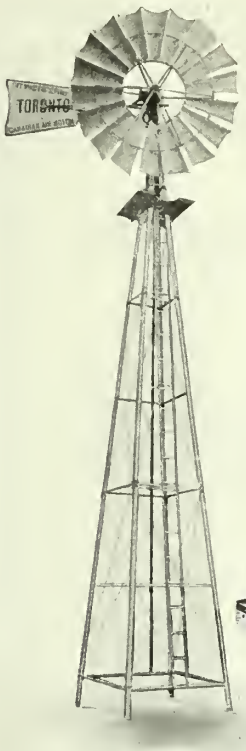
The plan was to keep two pens of twelve hens and a cock each, and a plot 50 feet long by 25 feet wide was selected just inside the garden gate on the north side

of the walk. This sight was chosen as being not too far from the house, therefore giving protection to the fowls against chicken thieves, etc. A six-foot woven-wire fence, with anchor iron posts enclosed the entire yard, and a similar fence was run lengthwise through the middle. Across these two yards, midway their length, were hung two portable wire panels, each 12 feet wide, which could be moved to either side of the poultry houses, thus making them into two separate yards whenever necessary. The houses were of the Howard type, 4 by 8 feet, painted dark green, two-storied and ample for fifteen fowls. The lower storey, or base, was without floor, which gave the fowls a runway on the ground. This base had one hinged window in front containing four 10-inch by 16-inch lights, two adjustable side doors covered with galvanized wire, a small door on one side, where the drinking fountain was fastened, and a large door in the rear, to which the nests were attached.

The upper story had a matched pine floor, upon which the litter for the fowls to scratch in was scattered, and there were removable roosts and galvanized drop-boards, which could be taken out and hung out of the way. There were also two windows, one sliding and the other the same size and shape of the one below, and a large door, with another small window in the gable, covered with muslin. This upper storey had the great advantage of sliding on iron wheels fastened in the top of the base, and could be pushed either way, giving easy access to the base for cleaning, while the height of this very convenient little house was about five and one-half feet to the peak of the roof; its equipment consisted of two metal feed-hoppers, one for feed and the other for oyster shells and grit.

Outside, three sides of the yard, masses of sunflowers were planted for shade and beauty, as well as for seeds, and the yards not in use were always dug up and planted to rye or oats and pease, the houses and birds being moved as soon as the green blades were up about two inches; thus planted the yards lasted from six to eight weeks. The food consisted of a dry mash made up by measure of wheat bran, three parts; corn meal, three parts, wheat middlings, one part; glutten meal, one part; ground oats, one part; fish scrap, one part; The scratch grain consisted of corn, wheat and oats in equal parts, fed in the litter, and in winter sprouted oats supplied the green food.

It is interesting to note that these birds have not only captured several prizes at the local poultry show, but yield plenty of fresh eggs in winter and many a toothsome broiler and juicy roaster in season. The average cost of keeping the flock was $37.50, while the gross returns averaged about $96, proving a very practical answer to the many discouraging hints this successful amateur was forced to listen to in the beginning.



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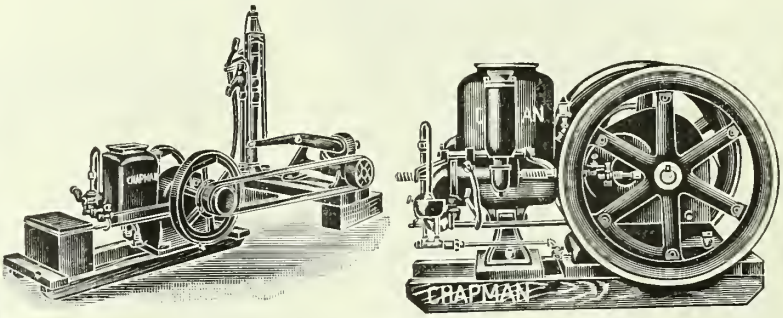

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Pasture and Grain Crop for Hogs

System for the Economical Production of Quality Pork

By BYRON HUNTER

SINCE economical pork production depends largely upon the consumption of a great deal of cheaply grown feed, the pasture should be so managed that the forage produced will be clean, tender, and palatable. In practice, hog pastures are generally managed in one of three ways: (1) Continuous close grazing, (2) alternate pasturing of equal areas, and (3) pasturing the meadow.

The method in most common use is to turn in all the hogs the pasture will support, leaving them in the field during the entire season. Usually the pasture is kept closely grazed. Too often it is overgrazed, the plants being cropped so closely that the stand is soon ruined. The pasture then becomes little better than a dry lot, and the hogs make unsatisfactory gains. When the feed in the pasture becomes scarce, either the number of hogs per acre should be reduced or other forage provided.

ALTERNATE PASTURING OF EQUAL AREAS.

One of the most satisfactory ways of managing a pasture is to divide it into two or more fields of equal area. These fields are then used alternately, the hogs remaining in each about a week or ten days. In the case of clover and alfalfa the growth is allowed to become three to four inches high before the hogs are turned in to eat it off quickly. When the pasture consists of such crops as rape, kale, and vetch, which will not stand close grazing, the growth is permitted to reach a height of eight or ten inches before the hogs are turned in.

Changing the hogs from field to field gives the pasture a period of rest, during which the plants recuperate and grow rapidly. When the stock is returned to the field the forage is clean, tender, and palatable and large quantities are consumed. Owing to the rapid growth made while at rest, a pasture that is subdivided and the areas grazed alternately is capable of carrying a much larger number of hogs per acre, other conditions being equal, than one that is continuously pastured.

Hogs usually graze a pasture somewhat unevenly, some areas being eaten off much more closely than others. To keep down the weeds and make the growth come on evenly, the pasture is clipped with a mower immediately after the hogs are removed. Hogs are inclined to root when the surface of the ground is wet or damp. For this reason the pasture, if under irrigation, is irrigated just after the hogs are changed from one pasture lot to the next. This gives the surface of the ground time to dry before the forage is large enough to be grazed.

PASTURING THE MEADOW.

Many successful hog raisers prefer to use such crops as clover and alfalfa for both pasture and hay at the same time. The number of hogs turned into the field is so limited that the usual crops of hay are made. The chief advantages of this method are (1) the presence of an abundance of feed, (2) the meadow is not grazed closely enough for the stand to be injured, (3) it is not necessary to subdivide the pasture into smaller areas for alternate pasturing, and (4) the changing of the hogs from one inclosure to another is obviated.

When the number of animals pastured is so limited that the usual hay crops are made, the growth becomes so coarse and woody that they do not consume as much forage as is desirable for economical gains, as the hogs relish the young shoots best. When the forage becomes too large to furnish desirable feed, an area near the watering place is clipped with a mower. This should be large enough to furnish the desired amount of pasture. In a few days the clipped area produces a vigorous growth of new shoots, upon which the hogs feed without materially disturbing the rest of the meadow. If the area first mowed is not sufficient to furnish the required feed, more of the meadow is clipped, as necessity may demand. To prevent the stand of these clipped areas from becoming injured by overgrazing, different portions of the meadow are used in this way from year to year.

GRAIN RATIONS WHILE HOGS ARE ON PASTURE.

While the cost of producing pork may be reduced materially by the use of such roughage as alfalfa hay, roots, or green-pasture forage, it is desirable to feed grain or other concentrated feed in addition. Mature, dry brood sows are sometimes maintained in an apparently satisfactory condition on good pasture alone. Young growing hogs, on the other hand, usually become ungainly in shape, big-bellied, and thin in flesh or stunted when compelled to subsist on pasturage alone. Figure 1 illustrates the condition of hogs run on pasture without other feed.

Hog growers differ quite widely regarding the quantity of grain that should be fed while on pasture. Some feed a full grain ration, i.e., all the grain the hog will consume. Others feed a medium ration, one that is equal to about 2 to 3 per cent. of the live weight of the hog. Still others prefer a light grain ration, one that is equal to only about 1 per cent. of the live weight of the hog. Occasionally men are found who run young shotes on pasture without other feed. This is a mistake, for it almost invariably results in a stunted hog. No fixed and fast rule can be laid down, for the supplemental grain ration which should be fed in conjunction with green pasture depends upon a number of factors, the more important of which are (1) the age at which the hogs are to be marketed, (2) the price of grain, and (3) the plentifulness and quality of the pasture.

RATIONS FOR HOGS OF VARIOUS CONDITIONS AND MARKET AGES.

If hogs are to be marketed when 7 to 9 months old, it is necessary to feed them about all the grain they will consume, in addition to the pasture, in order to make them reach the weight demanded by the market, 170 to 225 pounds. Hogs that are marketed when 10 to 12 months old are usually maintained on pasture alone during the grazing season. If fed at all, the grain ration is very light. This results in a slow daily gain, but a greater percentage of the growth is made from the cheaply grown forage. The added cost of maintaining a hog until 10 to 12 months old, however, usually more than equals the saving of the grain ration.

Mature breeding stock that is not expected to make any gain in weight requires but little, if any, additional feed when on good pasture. Hogs that are thin in flesh and nearly grown may be expected to make small daily gains without other feed when on the best of pasture. Pigs and small shotes usually become stunted when on pasture unless given a liberal quantity of additional feed. Young hogs should be so fed that they grow rapidly instead of becoming stunted. During the fattening period, hogs on pasture should be fed all the grain they will eat up clean three times a day.

THE PRICE OF GRAIN.

Owing to the fluctuation in the price of hogs and of grain, the supplemental grain ration is sometimes expensive. Under such circumstances there is great temptation to place the hogs upon an exclusive pasture ration. This seldom pays, for it usually takes approximately as much concentrated feed in the end, and much more time, to fit for market hogs which have been on an exclusive pasture diet as is required for hogs fed liberally while on pasture. Under extreme circumstances mature breeding stock or hogs which are nearly grown may be carried on good pasture until cheaper concentrated feed can be obtained.

QUALITY AND ABUNDANCE OF PASTURE.

The composition of pasture forage is quite variable. Alfalfa, clover, vetch, peas, etc., furnish feed that is much richer in protein than most other crops. Generally, therefore, hogs which are feeding upon leguminous pasture require slightly less concentrated feed than when grazing upon non-leguminous pasture, such as timothy, orchard grass, bluegrass, or the cereals.

It frequently happens that a farmer has more hogs than his pasture is capable of supporting. When such is the case the pasture will go much farther than if a full grain ration is fed. The more grain a hog consumes the less he will feed upon the pasture.

In general, pigs and shotes should be kept in a thrifty, growing condition at all times. It never pays to allow them to cease growing and become stunted. Brood sows, likewise, must be kept in good flesh (not fat) if large litters of strong, healthy pigs are to be expected. Figure 2 shows a herd of well-kept brood sows on pasture.

In gathering the material for this bulletin it was quite generally observed, on the one hand, that the men who are enthusiastic pork producers feed a liberal supplemental grain ration to young, growing hogs when on pasture. On the other hand, those who think there is little profit in raising hogs run them very largely on pasture without other feed during the grazing season.

HOGGING OFF CROPS.

Turning hogs into a standing field of mature or nearly mature wheat, barley, peas, or corn and allowing them to feed at will until the crop is consumed is called "hogging off" or "hogging down" the crop. To some this may appear to be a wasteful practice. Under good management, however, it is a very satisfactory and economical method of utilizing limited areas of these crops.

ADVANTAGES IN HOGGING OFF CROPS.

Some of the advantages in hogging off crops are (1) the cost of harvesting and marketing the crop is saved, (2) the labor of caring for hogs is greatly reduced, (3) the vegetable matter in the soil is increased, (4) the droppings of the animals are distributed quite evenly, and (5) the hogs are given exercise. It costs from 15 to 25 cents per bushel to harvest and market wheat in the greater part of the wheat belt of the Pacific North-west, the cost varying with the yield, the method of harvesting and thrashing, and the distance the wheat is hauled to market. In some of the more arid wheat-growing districts of both Oregon and Washington the yield of wheat is frequently as low as 6 to 8 bushels per acre. The cost of harvesting and marketing such crops runs from 35 to 40 cents per bushel. The cost of harvesting and marketing barley is approximately the same as that of wheat. When the hogs are so managed that the crop is thoroughly cleaned up, hogging off the crop practically saves the cost of harvesting and

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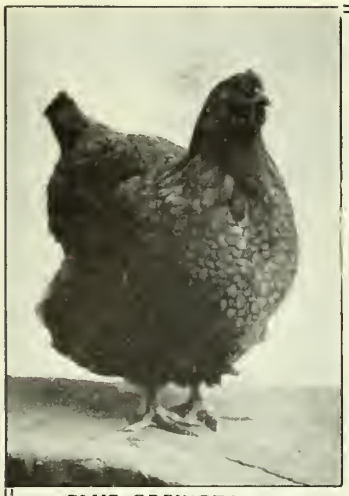

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marketing. In the case of light-yielding crops this saving is considerable.

Most of the crops that are suitable for hogging off are utilized during the busiest season of the year, i.e., at a time when it is very desirable that the hogs require as little attention as possible. If turned into a mature field of wheat, peas, or corn and provided with water, shade, and salt, the hogs require very little other attention.

Most of the arable lands of the Pacific North-west would be materially benefited by the addition of more organic matter. When the crop is hogged off, the straw, pea vines, or cornstalks, as the case may be, are left on the ground. By cutting this material thoroughly in the fall of the year with a sharp disk harrow and plowing it under, the soil is enriched in vegetable matter. This, in turn, greatly reduces the tendency of the soil to wash. The washing of soil due to the burning of straw and consequent lack of humus is well shown in figure 3.

In hogging off the crop, the droppings of the animals are scattered quite evenly over the field.

USUAL GRAIN CROPS HOGGED OFF.

The Pacific North-west is peculiarly adapted to the hogging off of crops. The wet season occurs during the winter months and the dry season during the summer. This gives a long period in which crops may be used in this way. The principal crops that are suitable for hogging down are wheat, field peas, corn, and barley.

Wheat.—Wheat is generally used from the time the first spots in the field are nearly ripe, about the stiff-dough stage, until the stubble field is open or until field peas or some other crops are ready for use. It will be seen, then, that the season for using wheat is from four to six weeks. If used during a longer period, there may be considerable loss from shattering, and the autumn rains in some localities may also damage the crop.

A soft variety of wheat with a smooth club type of head is best suited for hogging down. The club head does not shatter so readily as most other types. The true hard and bearded varieties, such as Turkey, are not suitable. The kernels become so hard and the beards are so severe on the hogs' mouths that they do not eat enough to make economical gains.

Field peas.—The field pea is one of the most satisfactory crops to harvest with hogs. The quality of feed furnished is of the very best, hogs are very fond of the mature peas, and under good management the crop is gathered with but very little waste. Most varieties of peas are comparatively large and difficult to cover. What is shattered usually lies on the surface of the ground until picked up later.

The hogs are turned into the field about the time the last peas are nearly mature. In most districts they may be used until about October 1, or until there is danger

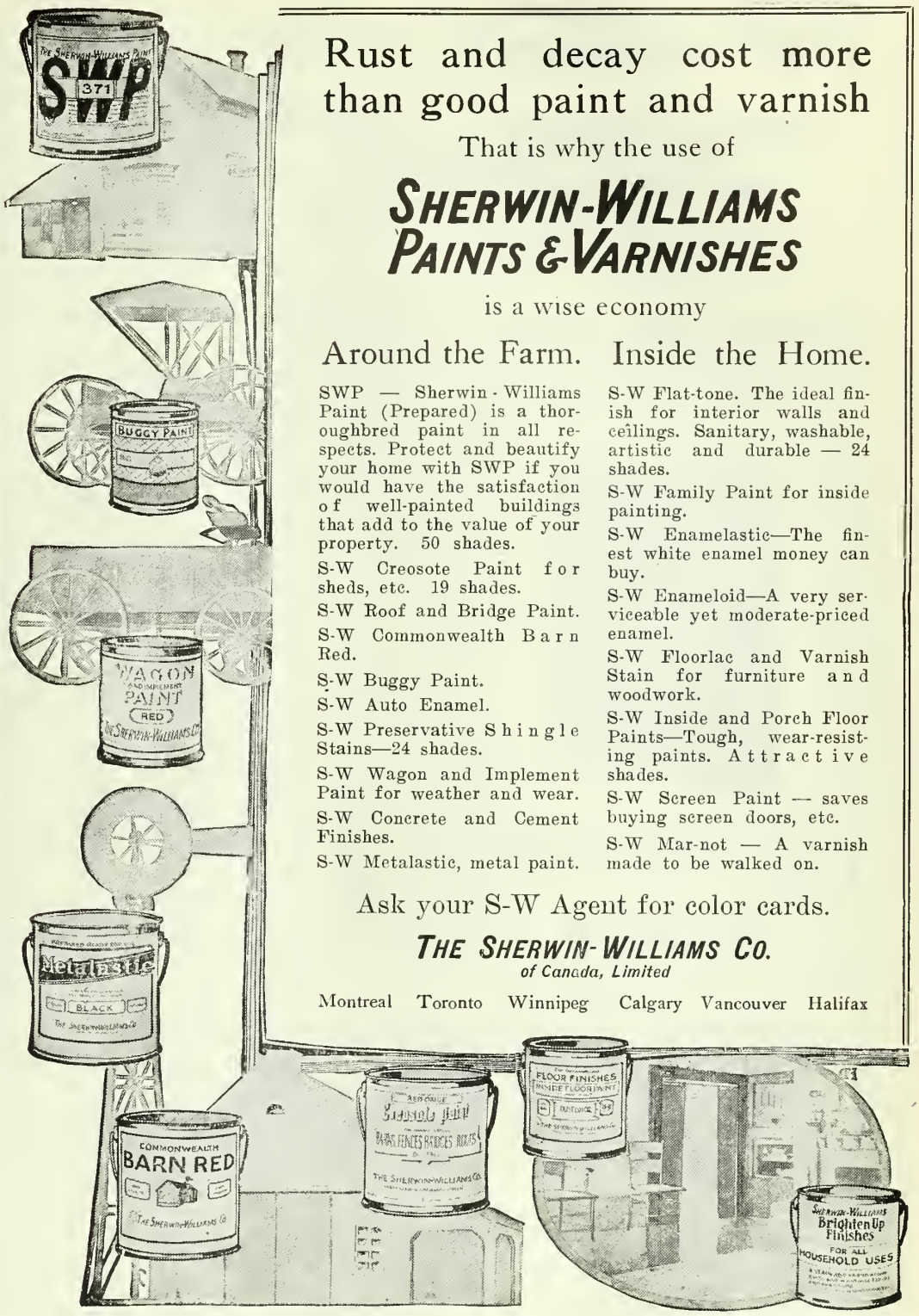
of the crop being damaged by wet weather. A protracted autumn rain falling upon a heavy crop that the hogs have not cleaned up may cause the peas to sprout. To prevent this the vines are sometimes burned as soon after the rain as they are dry enough. Burning the vines leaves the peas lying upon the surface of the ground. It is not necessary to burn the vines, however, if a movable fence is used and the hogs made to clean up the crop in small areas that will last from two to three weeks each. Some ripe, mature peas are rich in protein, green succulent feed in addition to the peas will help to balance the ration.

Corn.—Where corn is successfully grown it is an excellent crop to hog down. Carefully conducted tests at the Minnesota experiment station show that hogs waste no more corn in the field than when fed in lots, and that they gather it as clean as most men do in husking. Farm experience also bears out this conclusion. Corn is advantageously used from the time the ears are well glazed until the weather becomes unfavorable and the ground muddy. In some districts of the North-west, where the rainfall is scant, corn can be hogged off far into the winter. There is slightly less waste if a movable fence is used and the hogs are not turned into more corn than they can consume in 15 or 20 days. Especially is this true when the ground becomes wet and muddy.

Barley.—As a crop to hog off, barley is used during the summer, autumn, and winter. Because the beards, when dry and hard, are so severe on the mouth of the hog, the common beardless barley is generally used during the summer and early autumn. The bearded varieties usually outyield the beardless considerably, and for this reason the former are generally preferred for late autumn and winter use. There are some, however, who prefer the beardless varieties for all seasons.

If sown very early in the spring, beardless barley generally ripens about ten days or two weeks earlier than winter wheat. This makes it one of the first crops available for hogging off in the early summer. The hogs are turned into the field when the first patches are ripening, or when the kernels are in the stiff-dough stage.

Hogs do only fairly well on mature bearded barley when the beards are dry and stiff. After the autumn rains have softened the beards and kernels, however, they take to it readily. For late autumn and winter use the bearded varieties are allowed to stand in the field until the fall rains have set in well This usually gives plenty of time after harvest for the hogs to glean the stubble field. Blue barley, a bearded variety, is generally sown for late fall and winter use. When allowed to stand in the field it does not shatter and sprout nearly so easily as wheat or the so-called winter varieties of barley.



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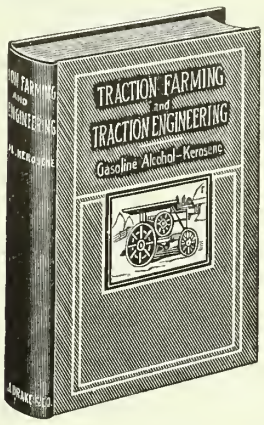

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Requeening the Hive

From 10 to 20 per cent. of Winter Losses are Caused by the Death of Queens Which Should Have Been Replaced in the Fall

By MORLEY PETTIT

A COLONY with a young, vigorous queen is much less inclined to swarm than one having a queen that is beginning to fail.

The swarming instinct is stronger in some strains of bees than in others.

These two points have to be carefully observed in swarm prevention; the former by requeening where queens are failing, the latter by rearing queens from non-swarming stock. Some of our most successful beekeepers requeen each colony every year towards the end of the honey flow, others keep a supply of young queens on hand to replace those that are found to be failing from time to time. In either case, the careful beekeeper will rear his queens from good stock that does not show an inclination to swarm. One authority, after taking ordinary precautions to prevent swarming, kills every queen that takes out a swarm, and requeens from non-swarming stock.

The loss from poor queens also shows itself in winter and spring. From 10 to 20 per cent. of winter losses are caused by the death of queens which were failing and should have been replaced the fall previous. Another ten per cent. of queens fail in spring and cause the loss of the colonies which would otherwise have wintered. Many which survive the spring spend the summer superseding and their colonies gather no crop.

HOW TO TELL A POOR QUEEN.

A poor queen may be known by the following points: First—By the uneven appearance of the brood. The queen does not lay regularly in every cell, but skips back and forth, producing brood where capped cells are interspersed with empty cells and open brood. Second—More than one egg in the cell when the colony is strong. This condition in summer always indicates either a poor queen or laying workers. The latter will be known by the fact that there are usually quite a number of eggs in the cell, and these produce only drones. Sometimes in the spring a good queen will place two eggs in some of the cells, because the cluster of bees is so small that she cannot find protected cells enough to hold the eggs she is prepared to lay. Third—A poor queen will leave the worker brood and go down to the corners of the combs to lay in drone cells. A good, young queen will not lay drone eggs at all on the start. Fourth—Crippled queens are not usually good. Fifth—Old queens are usually shiny and slippery looking. They are often stiff in their movements and slow. Sixth—When bees are cross or do not work well, it is sometimes the fault of the queen. Seventh—Drones in worker cells are an indication of a poor queen. Eighth—A queen which goes through the queen excluder is always a nuisance, and, especially if she does this for the purpose of finding drone comb, she should be disposed of.

HOW TO TELL A GOOD QUEEN.

A good queen, on the other hand, is known by possessing the opposite qualities to those given above, and some others. She will start laying in the middle of a comb and lay in every cell in a circle from day to day, so that, as the brood develops, each comb presents an even appearance. She will fill the combs right out to the end, down to the bottom, and up to the top; not leaving a rim of honey along below the top bar, if there is super room above for the honey to be stored we do not expect the brood chamber to be used for the storage of honey; we expect the brood combs to be filled from end to end and top to bottom with brood. She will place her eggs evenly, all pointing in the same direction and only one in each cell. She will leave any bits of drone comb in the brood chamber until the season is advanced, before she starts laying in them. She will have at least eight or ten combs of Lanstroth size filled right up with worker brood in the height of the breeding season. She is well developed in appearance, graceful and strong in her movements; not excitable nor easily frightened, but on the other hand, neither awkward nor sluggish.

A good queen is known by the workers which hatch from her eggs. We shall look for a moment at the kind of workers we would expect from good queens. First—They will be industrious workers. There is a great deal of difference in the working of different colonies of equal strength, as we learn by keeping records of the amount of honey produced. Second—The workers are good nurses, that is, they feed the larvae well. This difference can be noticed by examining the unsealed brood. If they are well fed there should be a little milky fluid around each one as it lies in the bottom of the cell. Well fed larvae produce stronger workers and are better able to resist disease. This brings us to the third point, which is, resistance to robbers and disease. Some colonies will defend themselves against robbers and European foul brood much better than others. The fourth point, is gentleness of the workers. You should always requeen a colony which is particularly vicious. There are gentle bees which work just as well as any savage ones and are much nicer to handle. Fifth—Some of our colonies swarm much less than others. There is no doubt that the swarming instinct can be bred out to a certain extent by selecting queens from non-swarming colonies. We know that queens reared

under the impulse of swarming are always strong and vigorous and, as it is the easiest way, it is always a great temptation to simply use ripe queen cells found in colonies which have swarmed, for raising young queens. This selection of breeders that swarm is not wise.

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Throughout the harvest season, from the first threshing of wheat to the last cribbing of corn, the portable grain elevator may be profitably used. It saves work and thus saves time and money.

In every grain-growing district farmers should be interested in wagon dumps and grain elevators, for they are among the latest labor-saving devices. What would require one man thirty to forty minutes to unload with a shovel could be done with a portable grain dump and elevator in from three to five minutes. He can then conserve his strength for other purposes, such as husking corn.

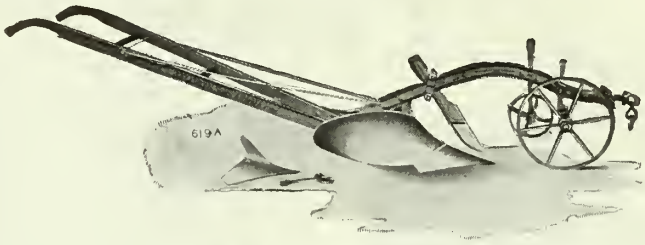
When the corn crop is ready to crib, it should be done quickly, and a good many days of time in the course of a season, can be saved by the use of a grain dump. There is a satisfaction in knowing that one has his grain in the crib before weather conditions interfere. One cannot afford to lose any time; he must save every possible minute and conserve every bit of strength for the important work of gathering the crop. There have been times in the past when the farmer has husked his corn in the spring, on account of early heavy snow falls.

Using a grain dump also enables a farmer to build his cribs higher, instead of covering more ground. They can go up in the air at little more expense, and one can save enough in the building of a crib to practically pay for a grain dump.

FOR FIELD FIRE PROTECTION.

A simple means of extinguishing field fires is given by George Arnold in *Rural New Yorker*. In a dry summer those whose fields adjoin a line of railroad are constantly menaced by the danger of fire running through the stubble, or even destroying standing crops. For whipping out a fire a wet grain bag has everything I have ever seen tried "beaten to a frazzle." This method was learned in the short grass country, years ago, at a time when we turned miles of firebreaks each fall to save winter pasturage for the cattle. Grasping the bag by one end and swinging it overhead the free end comes down well flattened out, and the broad, moist surface blots out a good strip at every blow. A solid grain bag (a bran sack is too light), wetted every few minutes, is heavy enough to swing well and come down with a good whack. When the fire is simply brushed out or stamped out it breaks out again and again, and it takes lively work to get ahead of the creeping flames. The moistened bag discourages the fire from starting again where it has been beaten out and makes one's blows count for something.

Famous Fleury Plows with "Tinkler" Wheels



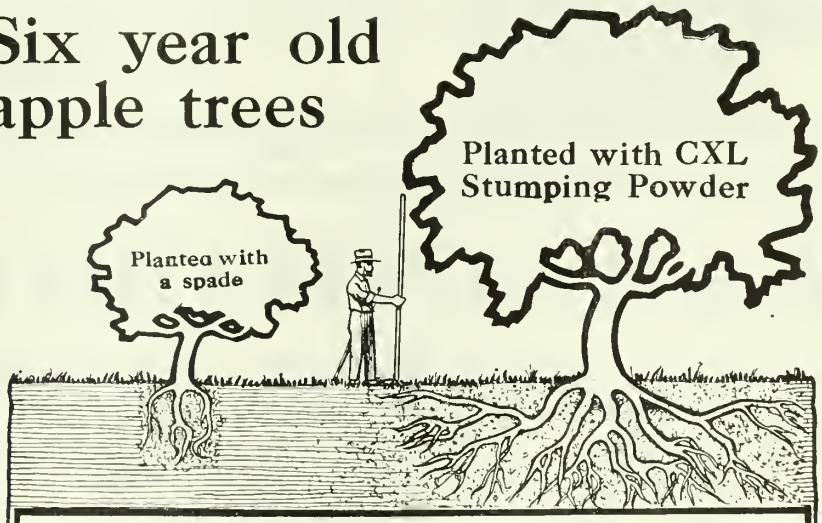
"Original" No. 21 T.W. Plow

Wheel Plows are not a new thing, **but this** Wheel Plow **is** a new thing. The **relative position** of the wheels on the **Tinkler Attachment** makes a **vast improvement** in the working of these plows over **any** Wheel Plows ever **before** used. These Plows can be used without the wheels when desired. We are the **original makers**, under sole license from the Patentee, of this Wheel Plow—**imitated**, as in the case of Famous Fleury Plows Nos. 21, 15A—**and others**, by other manufacturers. We need not tell you **how** the many differences, great and little, between this attachment and others produce the superior results—but need only state the **results actually produced.**

Under the plain and simple directions with each Plow, the furrows are struck of uniform depth and straight; so also in the **finish** of lands. But it is in the **main work of plowing** that the "**Tinkler**" excels. Here this Plow **shines**—outclasses all others. The **old man**, the raw plow boy—**anybody** who can **hold lines and turn a wheel** into a furrow at the end—can do—**cannot help doing**—"plowing-match" work! No pressing down or up—or sideways—on the handles—expending (wasting) energy; just **let the Plow guide itself** and there is a furrow of **even depth** and **exact width**. In crossing "dead" furrows the particular "set" of the wheels causes the Plow to accommodate itself as only the best of plowmen can make an ordinary Plow do. This Plow is **invaluable** to the farmer with **unskilled** or **inefficient labor**—as, once set the Plow to cut and turn the width and style of furrow desired, it **will do** this style of work in spite of the poor plowman and without his help.

J. FLEURY'S SONS - AURORA, ONTARIO, CANADA

Six year old apple trees



In spade dug holes, the roots are compressed within narrow limits by the surrounding hard-packed soil.

CXL Stumping Powder shatters and loosens the earth for yards around; thus the roots can reach out easily for nourishment, the soil will absorb moisture more quickly and retain it for a longer time.

Fruit trees planted with CXL Stumping Powder will yield from one to two years earlier than those planted in the old-fashioned way.

Besides—the planting is done in less time and with less labor.

Let us explain how to do it. There's a CXL Explosive for every blasting purpose. No more dangerous than gun powder.

Read "Farming with Dynamite" for the new and valuable ideas it contains. Sent free on request.

CANADIAN EXPLOSIVES LIMITED
Montreal—Victoria

CANADIAN EXPLOSIVES TRADE CXL MARK LIMITED

FARM BOYS!

THE ONTARIO AGRICULTURAL COLLEGE

GUELPH, ONTARIO

Opens SEPTEMBER 18th, 1914, for courses of two and four years. Every ambitious farm boy in Ontario CAN COME TO COLLEGE, BECAUSE—

Ordinary public school education is sufficient for admission to the Course.

The College Year begins September 18th and ends April 15th, so that students from the farm may return to their homes to assist in the spring and summer work.

Five months during the spring and summer gives many students opportunity to earn sufficient money to defray College expenses for the following year.

The tuition fee for Ontario students for two years is only $20.00 per year, while board and room in residence is obtained at $4.00 per week. A portion of the cost during the first year is defrayed by work on the farm and the various departments.

Students wishing to take the full Four Years' Course for the degree of B.S.A. conferred by the University of Toronto, do not require matriculation standing. Students are accepted for this Course if their standing on second year examinations warrants it.

Write for a College Calendar which gives full particulars.

G. C. CREELMAN, B.S.A., LL.D., President

WAR AND CROPS

The European political upheaval has had far-reaching effects. The ordinary channels of information to the farmer and investor were closed by a week's war. Do not let sensational rumors guide you from day to day.

Keep yourself informed through the authentic information concerning Canadian securities, bond issues, real estate, company promotions, crops and business conditions which is published in

Sign and Mail the attached coupon.

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Please enter my subscription to THE FINANCIAL POST at the rate of one dollar for four months.

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Financial Post
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"The Canadian Newspaper for Investors."

SILO WORK BEGINS.

THIS month will see the beginning of the silo filling. The dry summer has again hammered home the need for twin silos, one for winter and one for summer feeding. It will be well to thoroughly clean out the silo and sweeten the bottom with a good lime wash before filling with fresh ensilage. Have a man or two in the silo tramping and levelling the fodder, so as to ensure good packing. Fill the silo as high as you can, then after a few days more can be added without causing any loss.

See that all cutting edges and cogwheels are properly protected before you begin. Safety first must be the farm motto as well as the railway's.

Do not leave your corn on the soil long enough to become coated with sand. Co-operation with one's neighbors helps out much in silo filling.

WHEAT HARVEST.

The cutting, threshing, and marketing of the prairie farms' wheat crop continues all the month. It is a busy month for the western farmer. He pulls off his coat and rolls up his sleeves with the first day of harvest, and early and late his labors continue until the job is done. It is a big man's job. It takes muscle and sinew. It requires good meals and regular habits, for the sun sets the hours of labor, and the man and woman who would come through it triumphant must be steady, good-tempered and a careful eater and a sound sleeper. Let every farmer pay attention to these things and he will hardly feel the harvest emergency.

SAVE WHEAT LOSSES.

Much loss of wheat takes place at the ordinary setting of threshing machines at the prairie stacks. This ought not to be. Wheat is too costly a crop to lose at the spout. Canvas spread under the cylinders and grain elevators could be used to advantage. Manufacturers are now regarding these little leaks by placing canvas under the stookers and elevators on the binders. It is no sign of bigness for any farmer to disregard these little savings. It was a favorite method of some wheat farmers in the earlier days to astonish their eastern visitors by their disregard for the wastes around threshing time. I have seen, during 1899, when I first visited the prairies, enough wheat lost at a "setting" on a single farm to pay the whole threshing bill. Farmers now are getting a little wiser.

STRAW BURNING IS PASSING.

Many farmers are not now burning all their wheat straw. Especially is this so in Manitoba. It is being converted into manure by many and much of it saved by wise ones for tramping into rough manure by the cattle, sheep, hores, and hogs of the mixed farm.

STACKING ADVICE.

Do not stack your grain to withstand dry weather conditions only. Build to shed water, for we will have our rainy days before the thresher comes. Keep the center of the stack always full, and when the outer tiers of sheaves settle, they will slope outwards.

CUTTING THE LATE HAY.

Many farmers in the prairies will have opportunity yet to cut and save some slough grass. Hay prices will likely be good this year, and anything saved will mean much.

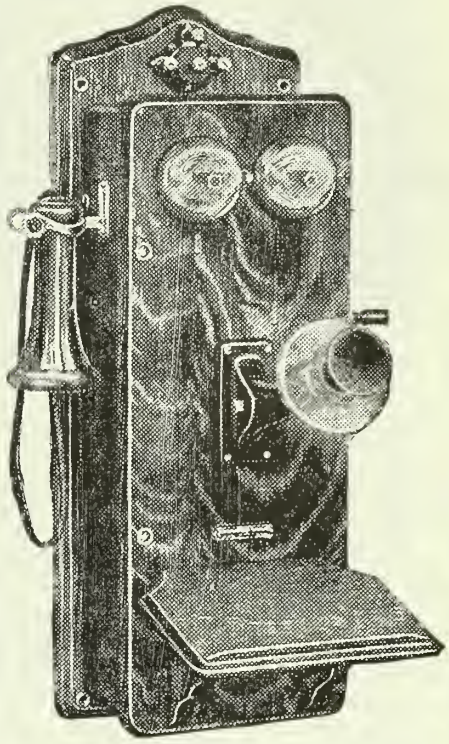
EARLY FROSTS AND TOMATOES.

Often a little trouble in covering the tomato vines during the cold evenings of the month will stave off the cold and allow your tomatoes to ripen well before the real hard frosts come. There are sure to be a few days of early frosts, after which there may be a month of sunny weather.

POULTRY IN SEPTEMBER.

Add a little of sulphate of iron to the drinking water of the hens during this

Guaranteed Telephones



INCREASE the efficiency of your telephone system by installing the latest style telephones. Canadian Independent Telephones are the highest grade made. We guarantee them to be superior in style, workmanship and material to any others on the market. You can prove this true by trying them out on your own lines, side by side with other phones. This you can do without risking a cent. Just ask us about our Free Trial Offer.

Get Our Advice If your locality does not enjoy the social and business advantages afforded by an up-to-date telephone service it is time you got into communication with us. We are the largest Independent Telephone Manufacturers in Canada, and have been instrumental in seeing that the majority of the independent local and municipal companies have started into telephone business along lines that insure success. We can help you get a telephone line for your locality. Write us and we will tell you how.

The No. 3 Bulletin This tells of the building of rural telephone lines. Write for a copy.

Canadian Independent Telephone Co., Limited

1832 Duncan Street, Toronto

This Winter Farm Intensively

Build a Greenhouse—*There's Money In It!*

IF we should tell you of a man who made over $25,000 in growing cucumbers and tomatoes the first year after putting up our houses, you would almost think we were stretching it a bit. But it's so. It's so much so, in fact, that he recently formed a stock company, and we are are now building for him a group of several houses that will cost over $150,000. All of which sounds big, and is big. But this man started in a small way—just as it will pay you to start.

We would, not for a minute, want to lead anyone to think that growing vegetables under a glass is a gold mine. Far from it. But any man, who is any sort of a manager at all, and don't mind working a bit himself at the start, can surely make it pay a nice, comfortable nugget each season.

During half the year you can farm outside. The other half inside. *All the year* you can be making money instead of only half.

If you have a thousand or more dollars to invest in a greenhouse, it's worth your while to look into the question. We will be glad to correspond with you concerning further facts and figures.

Lord & Burnham Co.

Limited, of Canada

Greenhouse Designers and Manufacturers

TORONTO, 12 QUEEN ST. EAST

New York, N. Y. Boston, Mass. Philadelphia, Pa. Chicago, Ill. Rochester, N. Y. Cleveland, Ohio

EVERY FARMER SHOULD KNOW

how to make the most money out of his land. If your Fall Wheat crops have been diseased and poor, there is a seed dressing that will ensure you a better field at trifling cost.

CORVUSINE D.G.

prevents ground rot, assists germination and is an excellent smut dressing. Corvusine is NOT poisonous, birds and animals will not touch it, and it has none of the dangerous features of bluestone and other obnoxious chemicals.

Write for particulars of this wonderful seed dressing to

McArthur, Irwin, Limited, - - - - Montreal, P.Q.

month. It will help them in the moult.

Do not overlook the thorough cleansing of the poultry house. Spray every part of it with some disinfectant. Use coal oil freely, also whitewash to which has been added some crude carbolic acid.

So not forget to get a wagon load of gravel for the hens during winter.

Sow a little rye early this month near the barns for the hens during the fall.

Watch the turkeys, ducks, and geese for wolves and other marauders. They are little trouble otherwise, as they feed on the fields and pick up a good living.

Read the August issue (page 7) of Farmer's for points on how to market your fowl to the best advantage.

WATCH THE HORSES.

The heavy work on horses during September demands of the western farmer especially that he take good care to keep the animals comfortable and in good health. Have no irritating parts on the harness. If pads are needed under the backbands or collars, get them at once. Wash the shoulders off with salt water whenever they are likely to scald. Change the feed once a week; a bran mash on Sunday will be a desirable change for the hardworking horse. Ease up a little on heavy grain feeding on Sunday, and if possible let the horses out for a change. Allow no yelling and abuse by inexperienced teamsters. Nine cases out of ten the man and not the horse is to blame. A good driver is known by his quietness.

WEAN THE YOUNGSTERS.

Colts will be weaned this month, especially where they arrived early in the spring. By this time the youngster has been taught to eat grain, and the change will be easy for him. If possible, keep him out of sight of the mother.

PLOWING ON EASTERN FARMS.

Every effort should be made by farmers in Eastern Canada to get as much plowing done this fall as possible. Western farmers do a great deal of their plowing during June and July on their summer fallows, while many will now be able to turn over much stubble this fall owing to the early harvest. The dry weather will keep plowing back some, but to the man who takes every advantage of the days, many opportunities will come for good work.

Good plowing is the best means of killing weeds, and it is a good thing to observe that plowing matches, both East and West, are being revived. During my trip through Manitoba in July of this year I did not see a poor piece of wheat where the farmer plowed right.

THE DAIRY HERD.

September often proves disappointing to the dairyman owing to the slowing up of milk yields. Wise farmers have already made use of the summer silo, while others have seen far enough ahead to have used green crops. It will pay to feed grain also.

The dry summer has been a bad one for flies, and many cows have dissipated enough energy in fighting flies to pay off

the interest on the mortgage. A spray costs little and saves this energy.

Prepare to market the poor cows. Be sure the cow is a poor one before you let her go. The daily test will tell you some new things.

DO NOT ASK BIG PRICES.

In war time the temptation will come to ask big prices and possibly to hold for future prices, on the part of some farmers. Above everybody else, the farmer deserves good prices, and when the fair thing is offered, let the produce go. No one knows just how the Canadian agriculture is going to go under the shock of Old World war clashes. It is our duty as farmers to produce as much as we can and to keep our heads level.

THE PRICE OF GOPHERS.

Western farmers have a real pest in the little ground squirrel or gopher. They attack grain fields and destroy a great deal if they are not checked. They multiply fast. I saw one field near Alameda where no poison or other means had been used to check them and fully three acres of wheat adjacent to the pasture had been eaten. The Government supplies poison free and anyone can use it. Care must be taken, of course, but farmers who have used it find that they have kept these animals killed off. Another farmer reports that his two little fox terriers take great delight in keeping the fields clear of the pest.

Groundhogs in Eastern Canada do the same kind of damage, besides making many holes under fruit trees and in meadows. These can be best eradicated by putting a cloth saturated with carbon disulphide into the burrows and closing the hole. Be careful, though, not to breathe the gas or bring it near fire, as it is poisonous and inflammable and evaporates very quickly.

DRAINAGE WISDOM.

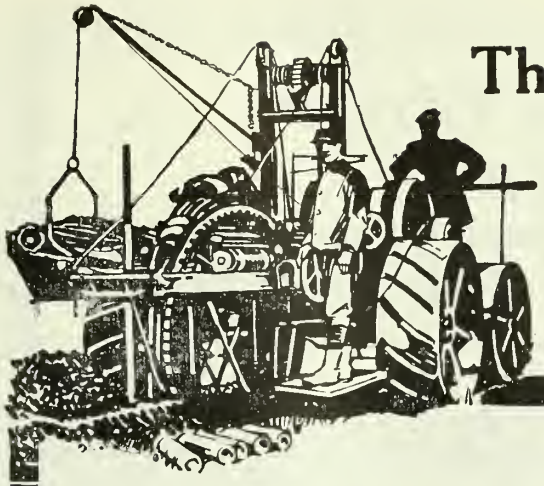
Although this year has not shown the need of good drainage quite so clearly as some years, yet if one will examine those fields that have been underdrained he will find less evidences of drought. A little draining ought to be done this fall if at all possible. The low spots often produce the best when drained.

A HARD YEAR ON CLOVER SEEDS.

Owing to the dry weather in Ontario, Manitoba and Saskatchewan, it is likely that the freshly seeded fields will suffer considerably. It will be worse than folly for any farmer to add to the difficulty by pasturing these fields this fall. A light coating of manure, with the manure spreader, will do much to strengthen the young plants when rain does come.

FIRE DANGERS.

Fire has caused farmers a great deal of worry this year, both on the prairies and in the other provinces. The dry weather has made it easy for a spark from a railway train or a careless smoker's pipe to do great damage. Farmers will do well to insist on safety first in the matter of fire. Allow no smoking around farm buildings.



The Money's There Will You Get IT?

Right in your own community there are thousands of dollars in ditch contracting waiting for the man who will be the first to get a ditching machine.

You can be that man. Others are earning *$15* to *$18* a day with a traction ditcher, making good land out of bad and at the same time saving money for the neighbors by reducing the cost of ditch digging.

BUCKEYE TRACTION DITCHER

A perfect trench at one cut

This remarkable machine digs up to 150 rods of ditch a day. It works in practically all soils and every foot is true to grade. Twenty years of success behind it.

Figure out where you can make your own and other farms in your community worth more by tile drainage, then write for the Buckeye Book of Facts No. 85. It will tell you what other men are doing and what you can do.

The Buckeye Traction Ditcher Co.

FINDLAY, OHIO

Builders also of Buckeye Open Ditchers and Buckeye Gasoline Engines for farm use.

WILSON'S ARE GOOD SCALES

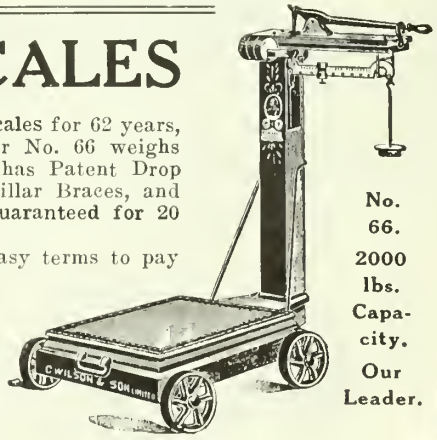
The Grand Trunk Railway have been using **Wilson Scales** for 62 years, and weigh as well to-day as when purchased. Our No. 66 weighs 2,000 lbs.; will weigh half a pound correctly. It has Patent Drop Lever, Brass Beam, Heavy Wheels, Strong High Pillar Braces, and **16 full-jeweled Diamond Steel Bearings that are guaranteed for 20 years against wear or breakage.**

Every Scale is tested by Dominion Government. Easy terms to pay is the Wilson way. Better write to-day.

Wilson pays the Freight

C. Wilson & Son

60 Esplanade St. E., Toronto, Canada

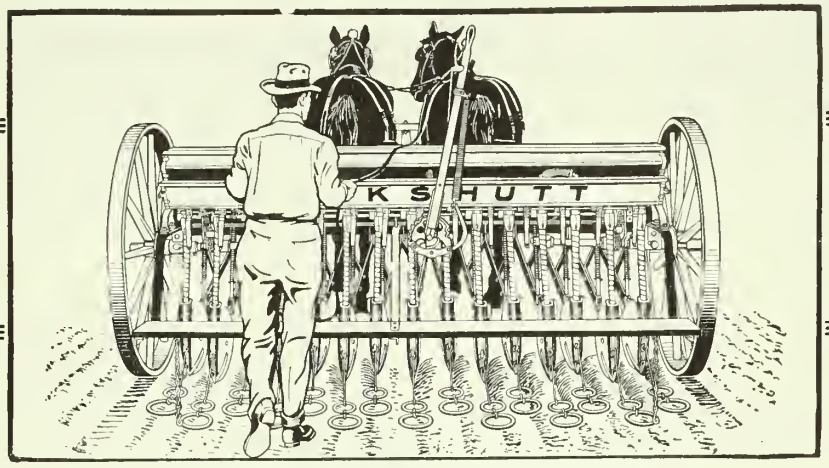


No. 66. 2000 lbs. Capacity. Our Leader.

For BIG Crops

Sow with a

COCKSHUTT DRILL



The COCKSHUTT DRILL makes every seed count in the harvest.

It sows 7 rows with the same seed others need for 6.

It yields 2 to 5 more bushels per acre.

It seeds acre after acre with absolute uniformity.

It encourages early, vigorous crop-growth that means good grain.

Trash won't clog it.

Rough ground won't alter depth nor feed.

Frame will never sag.

It is light in draft.

It is low—for easy filling.

It is economical of grain. (The feed is shut off at turns.)

It is staunchly built for SERVICE.

Finely adjusted for BEST RESULTS.

In every detail you will find it just the DRILL to insure YOU bumper crops.

See it at our nearest Agency. Or write for interesting pamphlet—"More Bushels Per Acre." It may throw new light on your particular planting problem.

COCKSHUTT PLOW COMPANY, Limited
BRANTFORD, ONTARIO

Sold in Eastern Ontario, Quebec and Maritime Provinces by

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How to Invest Money

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Technical Book Department 143-153 University Avenue, Toronto, Ont.

Allow no accumulations of brush and dead grass near the railway rights-of-way. If possible, plow a fireguard parallel with the tracks. Start no fires in waste or bush land until the rainy season begins. Protect all engine settings. Insist on the use of ashpans by threshers. Smokestacks should be guarded by spark arresters.

CUTTING COB CORN.

Cob corn will be cut this month to save it from frost. Stack it well so as to cure and stand the rains until it can be taken in.

CLEAN OUT CELLARS.

All storage cellars should be cleaned out and thoroughly sweetened with lime.

SELECT POTATO SEED.

It will be found a good practice to note the best hills of potatoes and to select your next year's seed therefrom before digging begins.

SPRAY APPLE TREES.

It may be well to give the apple trees a spraying this month to protect them against fungus diseases, which will be sure to show up when the wet weather comes.

MARKET FALL APPLES.

Do not let the fall apples waste. There will be good demand for them. Careful picking and packing will pay.

SOW FALL WHEAT.

Fall wheat had best be sown from the first to the fifteenth of the month. A fine seed bed is necessary. Use a drill in sowing. Top dress with 3 to 6 tons of manure, put on by a manure spreader if possible; also, it will help the crop to use a little lime as a top dressing. Clean out all the small grains before sowing, as only big seed pays.

OATS AND BARLEY AS NURSE CROPS.

Observing farmers have seen that either clover or alfalfa do considerably better when sown with barley as a nurse crop than with oats. King says, in his book on soils, "that oats exhaust the soil moisture a great deal faster and more than barley. Probably this is the reason why, especially in rather dry seasons, the new seeding does better with the barley." But a great many farmers greatly injure the growth of their young clover, as well as alfalfa, by seeding too much grain as a nurse crop. It is a species of greediness that, as Shakespeare says, "o'er leaps itself." It should require but a moment's thought to see that the coming clover or alfalfa is worth double in value what the grain crop is. Why, then, should the farmer endanger his hay crop next year by trying to get too much grain this year? We have seen hundreds of young clover and alfalfa crops practically spoiled in this way. It takes 500 pounds of water to mature one pound of the grain of oats. Reckon it up and see what that means to the young clover or alfalfa in a crop, say, of 50 bushels of oats to the acre.

A Concrete Root Cellar

is one of the farmer's greatest money makers. It makes money by keeping produce in good condition until it can be taken to market, or until better prices can be obtained. It maintains a cool, even temperature that

Keeps Produce Perfect

A concrete root cellar is always dry, clean and sanitary. It is proof against heat, cold, water, fire and rats. Although the greater part of it is underground, it cannot crumble or rot away. It is permanent and needs no repairs.

Tell us to send you this handsomely illustrated free book "What the Farmer can do with Concrete." It contains the fullest information about concrete root cellars and other farm buildings that never wear out and shows how you can build them at small cost.

Farmer's Information Bureau
Canada Cement Company Limited
746 Herald Building, Montreal

A Hundred Years Ago

Canada faced an emergency. Sir Isaac Brock was equal to the occasion—and the Battle of Queenston Heights was won. But it is the emergencies of the home that come closest to our lives now-a-days. In all well-appointed homes, Dr. Thomas' Eclectric Oil is found, and wherever it is found, it is a friend, a highly dependable friend to the entire household. It is an emergency preparation that will cope successfully with many minor ailments and with numerous complaints that afflict suddenly and require speedy attention. In the hand of experienced mothers and housewives it will often ward off, by speedy application, sickness that otherwise might prove serious. It is always ready for use, and no preparations are necessary to put it into effect. If any member of the household sustains a cut or a bruise, a burn, scald or contusion, this remedy will give relief. If a child be seized with colic, Dr. Thomas' Eclectric Oil, when sweetened with sugar, will overcome the pain and give the little sufferer ease. If a child shows symptoms of croup or other throat trouble, and the attack be met with Eclectric Oil, the suffering will be greatly mitigated, and by continued treatment with the Oil the ailment will be speedily subdued.

Dr. Thomas' Eclectric Oil is a perfectly trustworthy preparation, is absolutely pure in its composition, its effects are certain and salutary, and it can be used on adults or infants in the full confidence that it will relieve pain and heal injuries. While it is an essential in the household, it is found in the effects of most travellers as a useful companion that can be fully relied upon. Price 25 cents.

Northrop & Lyman Co., Ltd.
Sole Proprietors
Toronto

Are You One of the Capable Men of Your Locality?

DO NOT DELAY *WRITE TO-DAY*

FARMER'S MAGAZINE
143-153 UNIVERSITY AVENUE - TORONTO

DOES your present income permit you to enjoy all the every-day luxuries, an occasional vacation trip, a new watch, bicycle, or possibly an extra fall suit?

We are anxious to appoint a capable man in your district to represent Farmer's Magazine.

The work is enjoyable, keeping you out of doors and in touch with the activities of the community. You will not be a canvasser, for as a representative of Farmer's Magazine you will be received as one of the successful, capable men of the community. Consequently your success is assured from the very start.

At Home or Travelling
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IT'S GREAT
FOREST & STREAM
SMOKING
TOBACCO

The FARMER'S MAGAZINE

OCTOBER

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TORONTO MONTREAL WINNIPEG

A Complete Wood-Worker's Library

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Mission Furniture—How to Make It
PARTS 1, 2 and 3

comprising 98 designs, all different, with full instructions for making each piece, and **Wood-Working for Amateur Craftsmen,** a book explaining every essential step in wood-working. **The Mission Furniture** books describe how to make furniture for every room in the house, as well as swings and chairs for the porch and lawn. Whether you need a complete set or only some special article to fill in with here and there, you will find **full directions, dimensions and working drawings** for making it in these books. The instructions are easy to follow, so that even the amateur can get most satisfactory results. **Every piece of furniture shown** in the picture was **made by one of our readers** who is **strictly an amateur** with tools. He experienced no difficulty in the work and was so well pleased that he took this photograph, which he has kindly allowed us to use.

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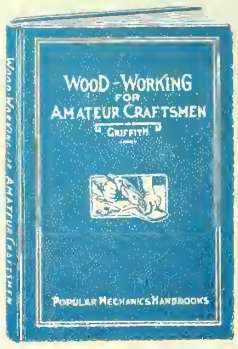

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7	48	22	5-6-7-9-10-11	23	26
8	40	16½	3-4-5-6-7-7-8	28	31
8	48	16½	4-5-6-7-8-7-9	29	32
9	48	22	3-4-5-5-6-8-8-9	29	32
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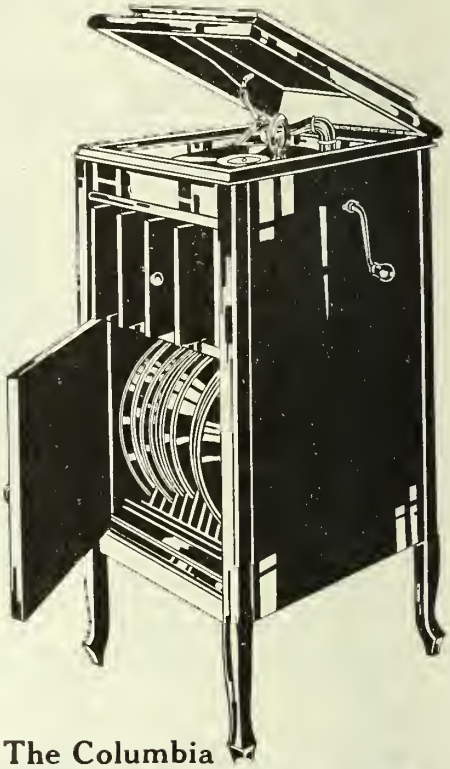

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FARMER'S MAGAZINE

JOHN BAYNE MACLEAN, President
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OCTOBER, 1914

F. M. CHAPMAN, B.A., Man. Editor
ETHEL M. CHAPMAN, Assoc. Editor
J. I. CODDINGTON, Ph.B., Cir. Manager

November's Charm is Good Reading

When November winds sough and sigh around the house corners and barn angles, the blusteriness only makes the farm evening beside the fire furnish all the keener joy and contentment.

Perhaps there is no farm publication that fits into such a time as the Farmer's Magazine. Its aim is to dignify, instruct, amuse and inspire the farm family. Its contents carry interest to every member of the family. It seeks to make the farmer as proud of his work as the merchant and professional man is of his. And at this time of national peril and trouble, the limelight of such a splendid isolation is thrown on the screen of public opinion. The farm is the best place to live, to work, to rest and to grow up a family. It is ever interesting, ever new, and appealing to the love that lies at the bottom of all of our lives.

Look over October's contents, where every farmer from Labrador to Vancouver finds something to interest. Good stories, unsurpassed illustrations, money-making suggestions, and inspirational specialties appear in that richness that is duplicated by no other.

If you appreciate the endeavors of the publishers in placing so healthy a Canadian farm publication within the reach of every farmer in the Dominion, tell the news to your neighbor.

In November, there is a bundle of good things already in preparation. Be sure to have it come to your desk. It reads as well on the first day as on the last.

Robert E. Pinkerton, the author of the Print of the French Heel, which appeared in Farmer's Magazine during 1913, has produced another story of absorbing human interest. Twisting Trails is the title, and the scene is laid in Canada.

Anyone who has followed the author's works will look forward to a most entertaining story. Mr. Pinkerton's life story is, indeed, a romance in itself..

He and his wife live in a six-room cabin, built entirely by himself, in the bush eight miles from Atikokan, Ontario. Their only means of communication with the outside world is by canoe in summer and dog-team in winter. There they work—for Mrs. Pinkerton is a successful writer and collaborates with her husband in all he does—free from the distractions of modern life, aided to true standards, by close communion with Nature and their life in the open. Naturally their principal work has been for the "out-door" magazines—stories and articles dealing with woodcraft and hunting.

"We live here because we would rather make this our home than any place we know of," writes Mr. Pinkerton, "and we expect to remain in the woods the rest of our lives—or until editorial conspiracy drives us back to a city to earn our living."

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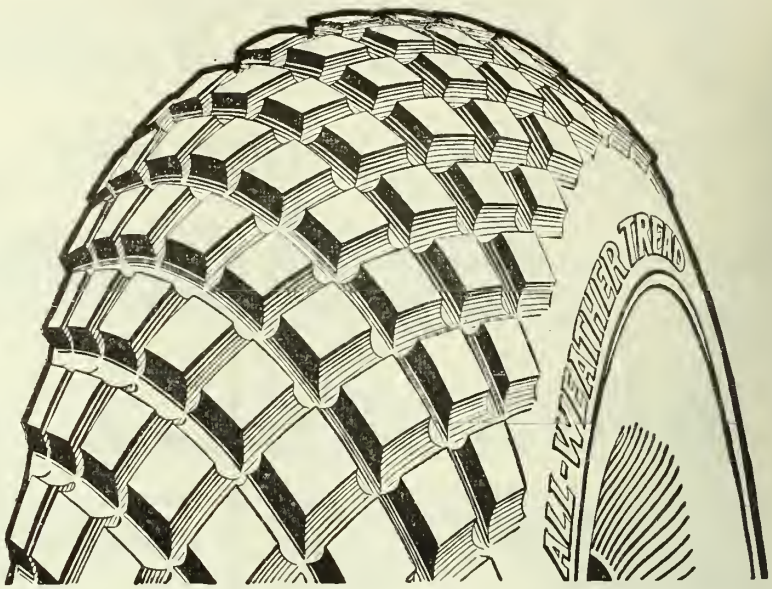

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FOR SALE BY ALL DEALERS

Why Wales Poultry Paid: By Justus Miller

A general view of Mr. Wert's poultry yards, looking towards the St. Lawrence.

There's More Than Money in the Game Says Mr. Wert, Whose 1,200 Hens Paid Him $1,100 in 9 Months.

There are so many differing plans for successful poultry plants that the beginner in the business well nigh gives up in despair. The value of all poultry articles lies in the revelations of common-sense that form the foundation of the successful poultry raiser. There is no absolutely perfect poultry-house for all climates and conditions. The main facts of how to raise poultry and how to market them can be gotten from these articles. The details and care must be worked out by the person in charge. These conclusions arrived at by this Glengarry breeder are valuable only so far as they are borne out by the experience of others.

"UNLESS a man is properly qualified to make good, a poultry proposition is a pretty good thing to leave alone," remarked the poultry professor of a well-known agricultural college recently. "A large number of people get the chicken fever every year, perhaps because they believe anyone can be successful at the game and because less capital is required than for some other lines of farming.

"We read of the successes of poultrymen who have started on both large and small scales in every poultry journal, but there aren't many stories written about the failures. And there are more failures than successes. The failures are due usually to lack of knowledge and lack of patient work. But even with these to aid him not every man could be a successful poultry raiser. He must have a natural fondness for their jobs."

One man who seems to possess these qualities demanded by the professor is D. G. Wert, of Stormont County, Ontario. With no previous experience of poultry husbandry on a large scale he built a plant four years ago, which in one year accommodated 1,200 chickens—and he made it go. A visit to his yards and a careful study of his methods made more clear the meaning of the professor.

Mr. Wert was engaged in the general store business for many years and kept chickens for pleasure. As the big city departmental stores came in upon his territory and he saw his trade taken away, he began to take stock of the situation. The store looked like a losing venture and the chickens seemed to offer a way out. Moreover, Mr. Wert was nearing middle age and the step could not be too long delayed.

After his decision he undertook a systematic study of poultry. He studied poultry journals, Government agricultural publications and text books at available moments. Then he gave up the store entirely and attended the poultry short course at the Ontario Agricultural College.

He began operations by buying 12½ acres of cheap land near his home village of Wales situated on the Grand Trunk main line some sixty miles west of Montreal. This location assured him of a good market, but it placed him in an exposed district in the St. Lawrence River valley, where the thermometer sometimes registers forty degrees below and usually remains on the wrong side of the zero mark a considerable length of time during the winter months.

Hence his first problem was that of building suitable houses.

"I finally decided that the square, open front house advocated by the Agricultural College, was best adapted to my needs," explained Mr. Wert. "It is 20 feet square, 3 feet high in front, 4 feet at the back and in the centre 7 feet. A house in this climate must be low down in front to keep out the snow and wind. The front faces the south and is covered with a wire mesh sufficiently fine to keep the sparrows out. The door is in the east end and a window 4 ft. x 5 ft. is in the west. I have cement floors which I keep covered with litter and so far have known no chickens to injure their toes as some poultrymen have reported. The nests are built near the door, after the upright cupboard style with a narrow entrance guarded by a door which is closed at night to prevent the fowls from making the nest a roosting place.

"The open fronts are guarded by three cotton screens. When the weather is below zero at night I put all the screens down. When it is freezing but above zero only two-thirds of the front is closed. During the day the fronts are left unguarded except in the case of storms when two screens are lowered.

This house appears to be cold, but I have never had any cases of frozen feet and very few frozen combs—and last year the mercury dropped below zero for fifty-nine consecutive days, sometimes to as low as 35 degrees. The chickens are healthy and lay very well, and after the experience of three win-

East end of square house showing water pipe system.

A view showing the well-shaded yards with supply tank in the distance.

ters, I feel safe in recommending it for districts of severe climate.

"I built ten houses of this pattern, each one accommodating 100 fowls, at a cost of $100 each, or one dollar per bird. My entire plant, land, houses, colony houses, incubators, hovers, etc., cost me $3,500."

Mr. Wert admits that he made one mistake in his building operations. Before studying the merits of the square house he built a long continuous laying house. A section of this building is used now as a store room for feed and in the remainder a grinding mill has been installed.

"It is of the ordinary dimensions 100 ft. x 20 ft.," continued Mr. Wert. "In some districts it has given very good results, but it is not adapted to this climate. It proved to be subject to draughts and when the partitions were built the western sunlight was excluded from all but the end pen. After one winter I decided to discard it and to build all over again."

Mr. Wert's object was to operate an egg plant pure and simple. He had no ambition to exhibit poultry as he argued that it would take all his energy to manage a laying strain. But while he didn't wish exhibition stock he decided that he would raise only pure breds. He secured eggs from trap-nested parents and in the first year, 1910, raised 300 pullets. These were increased to 1,200 in 1911.

SPECIALIZING IN ONE BREED.

"But right here I have another mistake to record," said Mr. Wert. "I attempted to specialize in four different breeds. I soon saw that was too many and cut them down to two. Now I am specializing in only one. One breed is all that should be kept on an egg farm unless the circumstances are very unusual.

"I began with the idea of specializing principally in Barred Rocks as they are less susceptible to weather changes than are many breeds. But I have discarded them for White Leghorns. The latter, I believe, are the only hens for the egg producer. They are more easily hatched and reared, are profitable the third season, eat 25 per cent. less than Barred Rocks and their eggs are more fertile. This may appear to be a rather prejudiced statement but I gave each breed a fair try-out and it is prompted by my experience."

After the usual misfortunes—or mismanagement—of the beginner he persuaded his incubators to work satisfactorily. These total a 750-egg capacity and are supplemented by natural incubation. In this respect Mr. Wert differs from many egg producers.

PROPER MANAGEMENT OF INCUBATORS NECESSARY.

During the unusually prolonged period of cold last winter, I fed my hens very heavily, which, I think, lowered the fertility of the eggs and the vitality of the germs. As a result I had the poorest hatch upon record. Under these conditions I secured an average 75 per cent. hatch from the hens compared to 60 per cent. hatch from the incubators. Moreover, the chicks from the former were more hardy and vigorous and are developing into stronger fowls.

"My setters do not cause me as much trouble as some would imagine—not much more than my incubators do. I set all the hens in the proper season—from the 15th of April to the 15th of May, as earlier hatched chicks are apt to moult in December and later one won't begin to lay in that month when prices are highest. I partition off one-third of the laying houses and in these sections place ten hatching nests 12 in. square with dirt bottoms. I set all the hens in a pen the same day and make sure that they are liberally provided with food, water and a dust bath. Altogether, I set in the neighborhood of 100 hens and have experienced no great trouble at any time with them."

After hatching, some chicks are placed in hovers in colony houses and some with mother hens. About 20 chicks are given to a hen and are allowed to remain with her as long as they will.

The cockerels are sold for broilers when weighing from 2 to 2½ pounds at about thirteen weeks of age. They pay for the cost of eggs and the cost of production of both cockerels and pullets. The latter are brought in from free range to the laying houses in November. As no milk is available Mr. Wert had some difficulty in calculating a balanced ration. He used beef-scrap as a partial substitute and feeds liberally with mangels and cabbages.

SEVEN-EIGHTHS OF THE EGG.

"The majority of poultrymen have solved the diet problem quite satisfactorily," remarked Mr. Wert, "but not so much trouble is taken always to provide pure water. The first year I used surface water from a shallow well. But I soon changed my methods. When I thought it over and considered that seven-eights of the egg was water. I began to realize how important a factor it was.

Then I had a well drilled and had an overhead storage tank built connected by pipes to all my buildings. The system paid for itself the first year. I cannot too greatly emphasize the importance of this feature. It is one of the most paying investments a poultryman can make.

In marketing his products Mr. Wert experienced no difficulty. He disposes of his eggs for breeding purposes to farmers in the vicinity who have been attracted by his success and to outside poultry producers through the medium of poultry journal advertisements.

Only a small proportion of his eggs are used for this purpose however. The majority are shipped to Montreal for table use. He made quality his basis and developed a high-class trade without much difficulty. He asked the Royal Victoria and other hospitals to test a trial shipment. These with a number of private customers take more than he can supply. Indeed he does a considerable business as a middleman, buying large quantities from neighboring farmers. He candles all these and carries on a private campaign to have improved stock raised and a product of finer quality put up in the district. Already he states a general improvement in quality can be noticed, while the quantity has been very largely increased.

"The farmers aren't losing anything by selling to me," remarked Mr. Wert. "I pay them from two to four cents a dozen more than the local dealers pay. I don't charge exorbitant prices at the other end either. When my customers remain loyal during the summer months of full supply I think it is good business not to charge them too heavily in the winter. In this way I keep my customers and am able to dispose of all the eggs of fine quality I can secure, while I make a good profit myself, too. Last season I averaged 50 cents a dozen during the winter months and 23 cents during the summer. From my 1,200 laying hens I made $1,100 net in nine months during the past season. These are not nearly such good returns as many poultrymen can show and if I had milk at my disposal I could do very much better, no doubt.

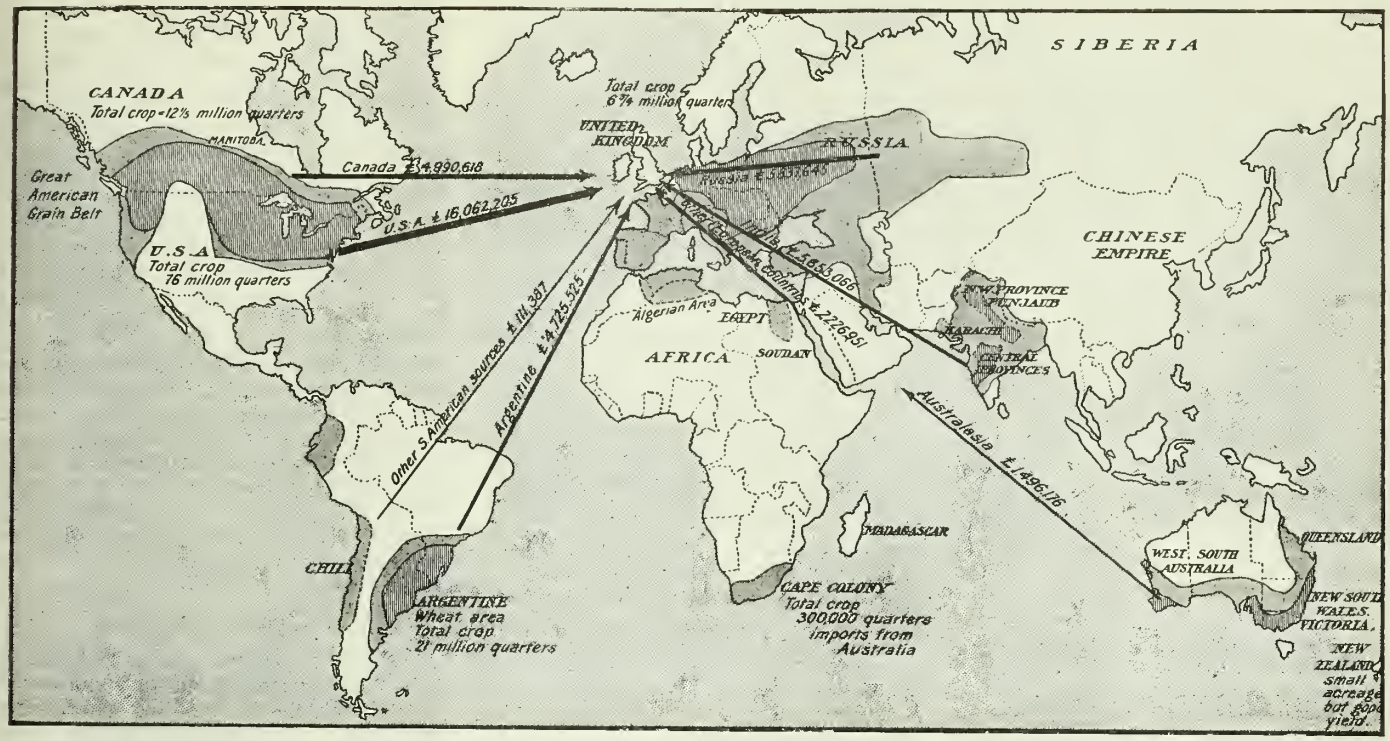
"But as it is I have proved to my satisfaction that poultry pays—and pays well. There's more than money in the game, too. I am my own employer and I like my job better than any other I have ever worked at. That is the best payment of all."

THE BIVOUAC

By S. C. Vance.

The last encampment
Crowds the quiet field
At close of day,
The busy corps withdrawn;
The sun low-bent
In ambush, from his shining shield
Still hurls the arrow-ray,
That lightly falls upon
The dewy grass.
The heavy wheels roll down the tree-
lined way
And echo in the shaded pass;
So dies the Autumn day.

Farmers in War and Peace: By FRANK M. CHAPMAN



Where Great Britain obtains her wheat and the figures which the various countries sent to her a decade ago. Since then, vast increases have been made in Canada.

Every Man Who Can, Ought to Get Back to the Land For His Own Sake as Well as Our Empire's.

UNDOUBTEDLY prices are rising for all products of the farm, with the possible exception of apples. Farmers in all parts of Canada are likely to secure good prices for grains, hay, livestock, vegetables, dairy products and poultry products, and it is likely that prices during the coming year will be even better from the producer's standpoint than they are at present. The advice, then, that has been given by leading agriculturists in various parts of the Dominion, to grow all the wheat possible, is surely along the right lines.

The fact that the farms of Belgium, France, Germany, Russia, and Austria, are either destroyed or weakened by the absence of the strong men, will mean, even with the most favorable turn to the war, a very slack harvest next year. Europe will be in dire need for food next year. So far, the producing world has not shown its ability to produce much more than enough for current consumption. At least, the distribution systems of the world have not been organized to such a perfection as to render production any more than necessary for present needs. Consequently, the demand that will be made on America and other continents will be accentuated during the coming year, as never before in the history of the world. Canadian farmers must recognize this in all that it means to them.

The enormous waste of crops and foodstuffs where millions of men are on a militant campaign can only be imagined by the average man. Add to this the bigger demand by their armies for supplies, that become greater than they require on a peace footing, together with the fact that their men are all or nearly drawn from the productive industries. One can gather many reasons for believing that there will be famine conditions in the world next year unless the rest of the world are exerting themselves mightily in the matter of food supplies.

The *Scientific American* in a recent issue had a striking cover illustration which served to show the demands of the big German army for one week of food supplies. In the background was a picture of St. Paul's Cathedral, with its immense and imposing facade. Beside this stood an enormous loaf of bread, the amount used by the German army for one week. At the other side was a big potato, representing 120,330,000 lbs. Between these rested a slab of meat marked 16,030,000 lbs., while lesser bags of coffee, 2,009,000 lbs.; salt, 2,009,000 lbs., and sugar, 1,365,000 lbs., stood higher than the doors of the cathedral. Let this supply continue for months and the appalling totals would stagger the imagination. We cannot think of the war in terms of years, so terrible is the need of a modern army where millions of men, and billions of war budgets are to be reckoned with. And agriculture must foot the bill.

Farmers must realize then that the future calls upon their products will be abnormally great. It is to them that the world looks for its food supplies and to them falls the privilege of giving to agriculture a sane, sound and forward policy in the matter.

To this end, the chief requisite in the farmer's mental equipment, is *sober common sense.* No greedy sense of gain should dominate him! He should not look upon this misfortune in the sense of a gilded opportunity for the accumulation of wealth. In times past this has been the master affection of many producers and in their eager race to grab, they have disorganized all their past good ideas of agriculture, they have forsaken the rotations demanded by agricultural judgment and have disobeyed the wisdom of soil improvement, and improved seed selection. It took the after depressions of a generation to bring back to agriculture that common sense she had flirted away. Let no such demon possess our rural brains to-day. Let us not forsake the good provident methods of sane agriculture. The improvements of peace must not be forsaken. The advantages of good seed, short rotations, fertilizers, livestock, clover, sprayings, and cultural methods must be kept, only intensified.

A farmer whose land will not produce wheat, is a fool to try it. Let him grow what his soil will produce. The maximum of everything is needed, hay, oats, corn, barley, potatoes, roots, and flax as well as wheat. There are, of course many fields now idle that will produce wheat, and it is to their owners that the words of the ministers of agriculture in Canada are chiefly directed.

The slogan for patriotic agriculture is —produce the most of that kind of produce that will be of the highest service in supporting man and beast. To do this, a man will not try to produce eight bushels of wheat on an acre that will grow two tons of hay or a big crop of corn for ensilage purposes. Cheese and butter are foods equally as important as wheat. Every available way should be attempted by the farmer to bring into its maximum production, every acre on his farm. The slack industrial centres mean that he will have more labor at his call next year.

Against this waste of fruit, in the orchards of Canada, there at once suggests itself the mighty need for the organization of evaporating plants, canning factories and vinegar works by our co-operative fruit-growers. They have been dilly-dallying with the question for years and now that the chance is here for them to make their fruit products into saleable articles, they lack the equipment. It is Canada's chance to move forward along all lines of agriculture and its associated industries. A broad, sane vision in our men, a righteous determination to be of service to the world and a little forgetfulness of immediate gain, will work wonders for us in getting us our place in the sun.

Parliaments cannot repeal the laws of supply and demand. War-time prices are prevailing both on the farm and in the city. The consumer is paying big prices for nearly everything that he buys, while the producer is getting, except in a few cases, good prices for his crops.

To remedy the situation for the consumer many have suggested embargoes, repressive acts and commandeering of food supplies by the Government. All such measures, expressions of the organized power of parliaments, while they may ease the burdens in some way, must hurt in other ways. The real facts of the situation cannot be overlooked. Parliament cannot repeal the economic laws of wealth. Interference often is as bad as non-interference. Free competition with favors to none and restriction of unjust combinations, if such is not a contradiction in spirit, will best end the troubles.

Never before was it so clearly made evident to our consumers in the city, the benefits to be derived from a co-operative understanding between the producers and consumers. Combinations in restraint of trade, all take place somewhere in that chain of commerce that lies between these two objective points. The closer then they can be brought together, the less of private monopoly and sordid speculation there will be possible.

FARMERS NOT CORNERERS.

It is not the farmer who makes the prohibitive price to the consumer. He is not a cornerer of supplies. Largely because he is unable to do so. By his very nature, he must put his goods on the market within a reasonable time at a reasonable price. What the consumer pays for these goods cannot and must not indict the farmer.

There are, perhaps, individual cases among farmers where the spirit of the tactics of the cornerer prevail. Such farmers invariably lose out in their "watchful waiting." They are not prepared to play the game to the finish, and for no other reason, the farmers as a class knowing their dependency do not institute blocking tactics to the distribution of food.

It is useless to claim for the farmer that he is any more humanitarian than his fellows. In the competitive world every man seeks to sell his goods at the highest price in the market.

Yet a spirit of fairness does prevail in the general body of agriculture. All they want is a paying price and a fair share of the consumer's buying rates. That the farmer is patriotic and benevolent has been instanced time and again in the present contest. Pro rata he compares very favorably with the big manufacturer who will not operate at a loss.

To try to prevent the farmer getting justifiable returns by reasons of an embargo or by a Government set figure for grain, is injustice unless the same repressive measures enter in and send cheaper supplies to the doors of the eaters, without paying toll to a greedy trust concern.

"The abnormal method of fixing prices by consultative committees of profiteers is foolish," says the *Irish Homstead* where war conditions are more real than they are here in Canada with us. "If we had the real thing as they have in Scotland," says William Graham, of Claremont, who has just returned with a cargo of Clydesdale horses, we would have some reasons in Canada for abnormal moves. In Scotland, almost in hearing of the North Sea guns, the questions of agriculture and food supply would seem to be of first importance, yet the farmers there carry their equanimity well."

U. S. FEELS THE PINCH.

The United States, our big neighbor to the south, is feeling the pinch also and Mayor Mitchell, of New York, has had a committee report on the situation. They sum up the reasons for high prices as:

> "First, the present and anticipated demand for our foodstuffs; second, heavy buying of household supplies by housewives in anticipation of future need; third, the holding back of commodities by producers, and, fourth, heavy stocking up by city and village storekeepers. The committee says that there has doubtless been collusion in some places ou some articles, but believes that under present laws it would be extremely difficult to reach such cases. We believe this committee has its ideas straight. No doubt trusts have taken advantage of conditions to use their monopoly power, but prices have been soaring on many articles not produced by trusts—wheat, for instance. Supply and demand—with anticipated future demand playing a leading part —are chiefly responsible for the price advances that have occurred in the past month."

The *Irish Homestead*, one of the best edited farm journals in the world, in an August issue, shortly after the outbreak of war, had occasion to note the havoc wrought by some avaricious traders.

> "We came across a report of a meeting of the Killinagh Co-operative Society at which indignant protests were made against the way in which the traders in Blacklion had raised the price of provisions. Indian meal had gone up in a few days from sixteen shillings to thirty shillings a bag. Sugar sold at seven shillings a stone, and American bacon at one shilling and a penny. These and other prices were raised before the retailers had themselves to pay one single penny for their own stocks. This kind of thing has been going on all over Ireland—not in every parish, we admit, but, so far as we can gather from reports sent to us privately and from reports in the press, there is not a county in Ireland where in many areas prices have not risen in this fashion. Now, it is no use passing resolutions denouncing traders, nobody minds words unless there is a will behind them. War pares most policies of their superfluous fleshiness and brings them down to the bare bone of necessity."

WESTERN CROP RISES IN VALUE.

The situation in Canadian agriculture is as yet nearly normal. There has been a big value added to the wheat crop of the West, owing to the better prices prevailing. The *Financial Post* in speaking

The invasion of Europe.
—From the Saturday Evening Post.

of the situation says that, "Owing to the good returns from the Western crop, trade is showing a disposition to get back to normal. The yield of wheat is better than was anticipated. It will be from 150 to 160 millions. This is in striking contrast to the report widely circulated to the effect that the wheat crop would reach only 135,000,000 bushels."

Revised estimates of the Western wheat crop show that the total for the year are likely to be nearer 160 millions than 135 millions, the earlier predictions.

The reasons for this are not for us to seek. During the period of drouth the reports of the dry weather over the whole of the West were about the leading news feature of the day, and naturally these assumed a greater prominence than they should have done. The effects of the dry weather were over-estimated even by the careful observers. Farmers themselves were liable to be a little pessimistic in their reports also, fearing that the worst would happen.

Then again the dry weather occurred at a time when the wheat was to a large extent, headed out and ready for the filling stage. During this period, the grain can stand much more in the way of dry weather, because the grain has established a deep root system and draws on the subsoil for its supply of moisture, as well as from the surface. In this way the filling stage progresses at a rate that often fools the commercial man. The farmer on his well-tilled acres never despaired of his crops. As a big farmer near Alameda told me:

> "I do not fear the results of my fields now. There will probably be a slightly reduced yield from what the spring growth gave promise of, but I look for thirty-five bushels to the acre from all these fields, even with no more rain to the harvest time."

And his crops at that time were all only nicely headed out.

Besides under these conditions grain fills better. There is always more No. 1 Northern wheat in a dry year than in a wet one. The grain seems harder, has more body and seems to ripen perfectly. An examination of the wheat head shows that a dry year lessens the yield often by some of the spikelets not filling up. Where a full wheat ear may yield sixty kernels. The way nature accommodates itself is by cutting off one or two rows of spikelets and concentrating on the remaining ones. Where the green stalk has made a vigorous spring growth, less and less action of this kind occurs.

In all probability further returns from the threshing machines will show that this result has obtained in the greater part of Manitoba and Saskatchewan.

THE APPLE GROWER WEEPS.

Against this added Western wealth and higher prices we have the plight of the apple growers in the East and West. Owing to the shipments to the old countries being rendered rather doubtful, there are many orchards that will not be picked. Buyers are offering 50 cents a barrel for No. 1 Spies, where there are no co-operative apple shipping associations.

The farm and her peaceful people have to bear a great deal of the war's frightful devastation. These are Belgian farm refugees.
—From the Independent.

Even these are finding it difficult to get a market for fall fruit and the lower grades of winter fruits such as Ben Davis. Such apples are being contracted for in large quantities by the canneries.

Livestock farmers are playing a waiting game. They are sizing up the present high prices of cattle and hogs with the high prices of feeding grains and hay. It is a question of figuring out a profit from winter operations under such circumstances. In many cases farms in the East, as well as on the prairies have in their hands carload lots of feeders purchased at the high prices prevailing during the summer. The war, of course, is likely to accentuate the value of all animals to some extent, whether it lasts months or years the results on meat values will tend upward.

LIVE STOCK PRICES.

The biggest increases have been for canners' stuff which can be readily handled by the big American packers. Stocker cattle here advanced very little as yet. Beef steers have reached high levels in Chicago and Chicago prices are reflected in Canada now almost simultaneously. The future for livestock raising looks bright.

But all farm products are likely to pay well for their raising. He is a most provident farmer, who gets down to his maximum efforts now, who does not forsake his well-known and well-tried methods, and who knows what his farm can do the best at. For assuredly as the Irish exchange referred to says, prices will go up.

> "Farmers may take our word for it that a European war continued so long, and engaging so many countries and so many millions of people withdrawn from agriculture will raise the prices of every kind of farm produce and that agriculture will be one of the few industries which will be able to hold its own and even greatly to increase the number of people engaged at it."

"As a result of the war," says an American writer, "live stock will be very scarce in all the European countries, and meats of all kinds will command high prices for several years to come. This war catches us short on live stock, due to the breaking up of the ranges and the high price of corn. Such a large proportion of the lands of the corn belt is rented, and so many landlords are insisting on growing corn, largely because for the present corn is worth more in the crib than in the steer, that the growing and feeding of live stock has decreased until meats are very high in price. This will continue; and, hence, the more live stock the farmer can grow, the better the quality and the better they are taken care of, the higher the price he may expect to receive.

Continued on page 67.

	1914	1913	1912	1911	1910
CHICAGO.					
July	19,790	13,807	14,700	21,484	26,313
August	22,423	27,197	34,313	32,184	48,247
	42,313	41,004	49,013	53,688	78,560
KANSAS CITY					
July	39,369	55,717	23,233	47,658	31,969
August	55,182	138,545	74,142	61,656	72,784
	94,551	194,262	97,375	109,314	104,753
OMAHA.					
July	10,147	11,448	15,116	23,672	
August	30,513	41,065	39,275	56,075	
	40,960	52,513	54,391	79,747	

Farm Horses Are Best War Horses

Lessons Learned From the South African War Where Farm Horses Stood up Well.

Just now there is a great call by the Allied armies for war horses for use in the Continental campaign. Reports just to hand from England are to the effect that owing to the demand, great numbers of mares are being shipped forward for service. If so, this is a disaster of no small proportions for the future of horsebreeding. The demand for horses after the war will be so urgent that wherever possible mares should be retained by the farmers and others, for the sake of breeding purposes. The cuts in this article are loaned by courtesy of the Agricultural Department of Ontario.

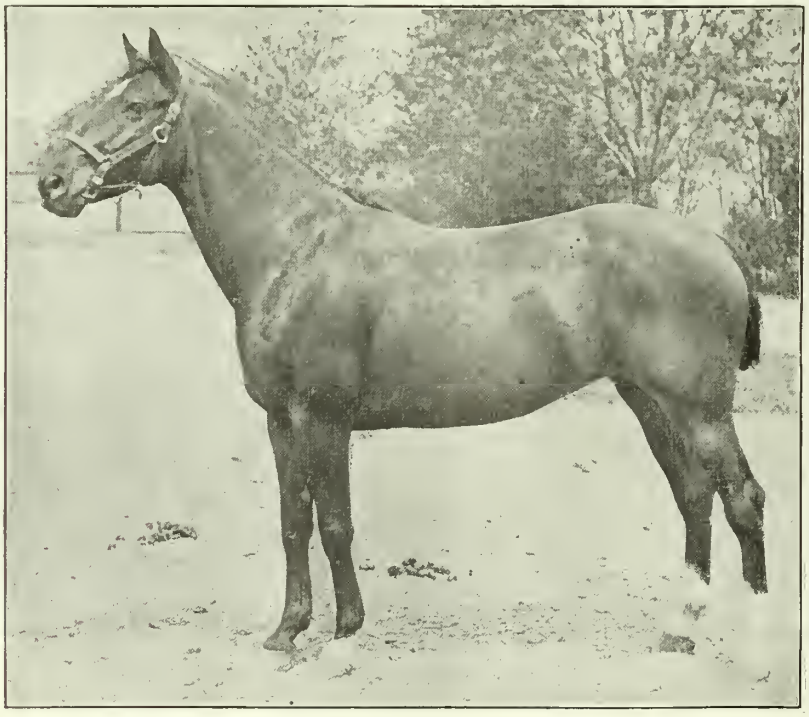
THE Canadian horses in the African War as reported on by Lieut. John McCrae, R.C.A., and published in the Farmers' Institute report for Ontario in the year 1900, has considerable bearing on the war demand to-day for serviceable remounts. Recent despatches from Europe tell how German horses have given out in the forced marches across France and Belgium.

Battery D mobilized at Ottawa in January, 1900, the horses being brought in from the country surrounding London, Guelph, Port Hope and Ottawa, the majority from the last-named vicinity. One hundred and thirty-seven horses per battery were purchased, the limit of price being $150, and this price was paid in only a few instances. The average price was probably between $120 and $140. The type of horse selected was the ordinary general purpose farm horse, six to eight years old, 15.3 to 16.1 hands in height, and weighing 1,100 to 1,400 pounds. A rather blocky horse was considered desirable.

The Ocean Journey. These horses were brought to Ottawa and stabled there for a couple of weeks, after which they were sent in comfortable cars to Halifax.

Two weeks after landing at Cape Town they were sent into the Korroo desert upon what proved to be the hardest march of the war. It consisted of 560 miles through desert land where water was the scantiest. During about three weeks, the total daily ration per horse was 5 lbs. wheat, 5 lbs. chaff and the roots of any trees they could find. Despite the fact that they suffered from sand colic and hunger, at no time was the battery encumbered with foundered horses. After the war about 78 Canadian horses were sold to the Imperial Government for $115 each.

Bred in Ontario and bought by Col. Dent for the cavalry class, 15.1½ to 15.3½ hands.



A good type of the mounted infantry class, 14.1 to 15.1 hands.

These horses were mostly ordinary farm horses. Many of the teams showed a Clydesdale cross, a few may have been Shire, and several had the old French blood in them.

Compared with the British artillery horse, the Canadian horses looked to be heavier in the bone and rather smaller in the barrel, and altogether less stylish, both in build and action; but the British horses which were obtained at the remount stations generally showed far less power of endurance when side by side with our horses doing similar work. They lacked the spirit shown by the Canadians in keeping at their work until completely done up.

It was demonstrated that the best horses were those which all their lives had the ordinary care of the farm. There is no horse so fit for work in any climate and in all degrees of privation as the horse whose muscles are in good training from constant farm work. If the goodness of the Canadian horse be due to this training, it follows that a couple of years in the comparatively easy work of barrack life would render him less fit to stand privation and hardship, than if he were taken straight from farm work.

In his 1900 report to the department of

Continued on page 67.

The Trend of Agriculture

Interesting Items and Debated Questions Answered for the Good of the Farm.

DOUBTFUL INFLUENCE.

Prof. W. T. Macoun, Dominion Horticulturist.

"In our experience we have not found that the stock has any marked effect on the graft or scion so far as it relates to the fruit. It is just possible that under certain circumstances the season of the graft might be influenced somewhat by the stock. I believe that the scion influences the root system of the stock. In our experience we have not found that the stock makes the scion hardier, but in top-grafting, a variety with a naturally poor trunk or one that is affected by sun scald, may be successfully grown by top-grafting it on stock which has a good trunk. It is possible that the color of the fruit of a top-graft is sometimes better than the same variety grown as a standard tree, but this does not always hold good."

EFFECT OF PARENT STOCK ON GRAFT.

Prof. J. W. Crow, B.S.A., Pomology Department, O.A.C.

"Replying to yours of recent date concerning results which may accrue to the fruit because of the parent stock upon which the graft is made, would say that this is a matter of considerable controversial interest. For all practical purposes, however, I think it is generally conceded among fruit-growers that the principal effect of the stock has to do with the vigor of growth of the tree. There is little or nothing in the popular idea that grafting may change the hardiness or season or quality of a variety. It is well known, however, that a strong, vigorous root is essential to the production of a vigorous tree, and conversely it is also the case that a weak-growing root gives less growth and less vigor to the parts above ground."

"EVERY man who has land ready for seed next spring can rest assured that he will have seed provided to put in his crops." This statement was made by Hon. Walter Scott, Premier of Saskatchewan, after a conference with the Dominion Government early in September. This move was taken because of the adverse crop conditions this year in the south-western part of that province. In other parts of the province the crops are up to the average. In some parts they are above the average, and yields of thirty-five bushels of wheat are quite common. In view of the likely demand for grain next year, every farmer must be in a position to obtain the maximum results from his farm, and this Department of Agriculture is doing all it can to help the les fortunate ones.

DEER AND ORCHARDS.

While Ontario has to grapple with the devastations of their apple trees caused by mice and rabbits, the New Brunswick Horticultural Branch of the Department of Agriculture is bothering itself to overcome the destruction caused by deer. Mr. Turney, the New Brunswick Provincial Horticulturist, has many complaints from orchardists. Grain crops suffer severely also. One case in point is that of James S. Neill, not ten miles from Fredericton City. He had the tops of 1,500 trees browsed off and their shape more or less spoiled. The game laws there prevent any farmer from shooting or otherwise killing deer found on his land. The farmers have objected to this because the Government have provided for no compensation to be paid to the farmers. They are naturally comparing these laws with those across the border in New England, where they say the rights of the farmer are protected. Resolutions were passed recently by organized bodies of farmers and it is confidently expected that some provision will be made to indemnify farmers from the excursions of these Government animals as they are called.

WHEN EXPERTS CEASE—AN OPPORTUNITY.

The move made by the Ontario Department of Agriculture to cut off all Farmers' Institutes and the sending of expert judges to the local fairs, will have the effect of throwing farmers on to their own resources. If it develops a local feeling for bettering their own conditions; by using the good even in their own neighborhoods, for judges, and for expert advice, this embargo on information will have worked out a great good. Besides, local organizations, such as farmers' clubs, fruitgrowers' associations, and Granges of the United Farmers of Ontario, will be inspired to new life because thrown on themselves for improvement and entertainment.

The result may open the eyes of the farmers to the powers of spontaneous development and of local importance as opposed to the parental methods to which, of late, all of our Governments have tended. It must be true in the legislative sense as in the personal one, that too much asistance develops an undue dependence. Where farmers have their entertainment and instruction, spoonfed to them, they are likely to lose the power of self motion. No greater benefits can accrue to a neighborhood than those that arise from the activity aroused by home efforts.

A farmers' club could easily be formed in any farming community, and its meetings arranged for in the rural school or nearest village hall. Here by a minimum expenditure they could meet, debate, discuss, and invite in to address them, the already abundant talent that must have accumulated in all parts of the country by reason of our educational work in agriculture of recent years.

We have hundreds of young farmers, whose knowledge of soils, animals, rotations, specialized farming, farm engineering, and machinery installation, would be welcomed by every wideawake farmer.

The war scare has perhaps caused some of us to take on absurd fears. Farmers, above all others cannot afford to sit still to see which way the trend of production is making. We must move, with the brow bent to intensive returns. There is need for much. There will be a market for it all.

It is the duty of every farmer to look to the things of his own vicinity, for their betterment and for the general uplift of agriculture within the Empire. We dignify our country as well as ourselves when we believe in our business and prove our beliefs by works.

J. Lockie Wilson, head of the Ontario Agricultural Societies, put up one of the most attractive exhibits of the Canadian National. His work in encouraging the field crop competitions has meant thousands of dollars to the province. The $100 world's prize grains are in the foreground.

The Mobilization of Farm Products

Special Messages to the Farmers of Canada. Call Local Meetings Says Dr. C. C. James.

CALL MEETINGS AND DISCUSS IT.

Dr. C. C. James, C.M.G., Commissioner of Agriculture, Ottawa.

Great Britain has called on Canada for men and food. She will welcome all the men whom we can send forward, provided they are competent. In the minds of many there is an opinion that from now on we can best serve her purpose by sending forward food and by planning so that an ample food supply shall be assured during the next year or two. Here is an opportunity for serving the Empire and our own country at the same time. Many schemes are suggested looking to agricultural expansion and the helping out of our own people. Some of these are practicable, some impracticable. It is very difficult to apply to agricultural work forces not trained to it. Food produced by inexperienced and incompetent labor is produced at a loss. The only rational plan is to take the agricultural forces of the country and by giving such help and stimulus as may be warranted enable them to extend their work. The farmers of Canada should be brought to realize clearly that for the next two or three years the world will take at a good price all the food that we can produce. This means that the farmers of Canada should first of all understand fully the situation that now exists and the inevitable outcome of the present war as far as food is concerned. Farmers, as well as others, need information as to the situation.

The next point is that it will not be wise for Canada to undertake any schemes that are not strictly economical; that is, we should not spend two dollars to produce one dollar's worth of food. Any plans undertaken should be carefully considered and we should spend our money only along productive lines. Governments, municipalities, corporations should give most careful consideration to any plans suggested for increasing food production. We can best use the farming community to produce an increased supply of food, and any plans for assistance and expansion should be based on sound economic principles. This, of course, should be kept quite distinct from propositions to place out of work people on vacant land to grow food for themselves.

Hope of increased production rests largely with the farmers themselves. They must know the situation and they can be stimulated to greater effort. This leads up to the question you ask as to "the best policies to pursue in agriculture during the coming winter and next year."

I submit that the first and best thing to be done is for the farmers to be called together in meetings in all parts of Canada to discuss this question, to receive information as to the situation and to be stimulated to increased effort. If they understand clearly the situation they will respond. Co-operation in planning is desirable. In such conferences, possibly, schemes can be evolved that will call for co-operation on the part of Governments, municipalities and corporations.

Where the Federal legislator works.

TO LIVESTOCK BREEDERS.

Prof. Geo. E. Day, B.S.A., Animal Husbandry, O.A.C.

"It looks to me as if the livestock interests of this province have nothing to fear from war times. My advice to men interested in livestock would be to go steadily forward and not to be tempted to reduce herds by the high prices prevailing for nearly all classes of stock at the present time. I would not advise any man to unduly load himself up with stock of any kind, but it is certainly not a time to curtail operations in stock breeding. I believe that the farmers who hold on to their best stock and keep their breeding operations up to the standard will not lose anything by following such a course. It is seldom safe to plunge, and it is seldom the part of wisdom to let good breeding stock go to the butcher on account of a high price, and thus reduce the stock on the farm for years to come. The man who has his farm wisely stocked has every reason to view the future with complacency."

PREPARE FOR STRICT ECONOMY.

W. C. Good, B.A., President United Farmers' Co-operative Co.

"Prices for farm products will probably range high for some time; but the world will feel very seriously the depression following the war, though the Canadian farmer will, possibly, be injured by this depression less than anyone else. Canadian conditions will be aggravated, however, by the depression following the reckless extravagance of the last two decades. The farmer may well prepare with other citizens, for a period of strict economy. If, however, the painful experiences which are in store for all during the next few years result in a general stimulation of agriculture, they will not have been endured in vain.

"It is as yet rather early in the game—the rich man's game of war—to make any positive inferences therefrom. Who knows what may happen during the next few weeks, with hell let loose!"

LESS PASTURE, MORE WHEAT.

Hon. James S. Duff, Minister of Agriculture, Ontario.

"I hold that the man who joins in the effort to keep up an adequate supply of foodstuffs in time of war is rendering service to his country only second to that being rendered by the man on the firing line.

"This war has shown, even in its very early stages, the absolute interdependence of one nation upon another. Consequently it is impossible to dislocate production and industry in one country without it being felt in another. The fact that millions of men have been taken away from production in Great Britain and in most of the countries of the European continent means that next year there will be a very strong call to make up the foodstuffs which these countries have in the past supplied.

"Fortunately situated as we are far from the actual theatre of war, free as we are from having our lands devastated by the march of millions of men. I think that all who are on the land should do their best to see that the Motherland shall not suffer for want of food.

"Wheat is naturally one of the first things thought of. While Ontario has been gradually replacing wheat with other crops, I think that a special effort could well be made to devote an increased acreage to wheat during the coming year, starting as far as possible this fall. During the past season there were over 3,300,000 acres of land in pasture. Now that it appears likely that there will be a plentiful supply of labor for the land it seems to me that a large part of these pastures might be broken up and put into crop, and in this way our acreage of crops could very easily be increased.

"I think that every farmer should feel

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Marples---Ingenious Prairie Farmer

An Electric Power Plant on the Heart of the Prairie, Turns Machinery and Lights Up a 2,200-Acre Farm That is Making Good Returns.

By F. C. MACKENZIE

"I DON'T think you could find in Canada a desirable spot for mixed livestock farming. Water anywhere at eight feet, ideal shelter belts of trees, abundance of grass and a model climate, these are facts that always appeal strongly to the farmer."

This was no idle boast of an incompetent judge. The love of the soil which so often discounts a man's predilections could not severely have warped J. E. Marple's deliberations. Born in England, apprenticed in the fruit belt of Niagara, a sojourner in several provinces, this big 2,200-acre farmer near Hartney, Manitoba, summed up the experiences of a lifetime of successful farming in these words.

The civilizing influence that a Westinghouse harnessing of the 110-volt electric current gives to modern farm life. Built and designed by a prairie farmer.

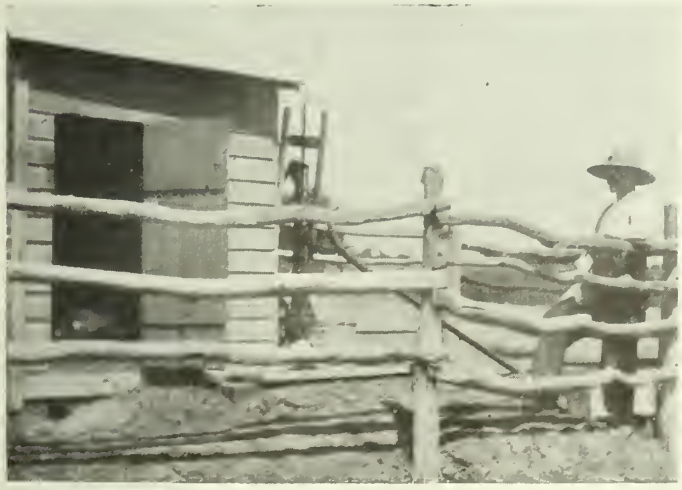
Large herds of "White faces" Jersey Red hogs, Oxford Down sheep, and working Clydesdale and Percheron horses attested eloquently to the practical wisdom of a man who had arrived twenty-eight years ago from the East with only $50 in cash, a wife and small family and who, to-days, enjoys the creature comforts of a modern electrically equipped farm and home and a financial rating of over $60,000.

He has made farming pay. His big farm of three and a half sections of prairie soil has fully 1,100 acres in crop each year. This crop and the pasture grasses on the balance of the farm have returned him everything that he owns to-day. They say farming does not pay, but here is concrete evidence of the accumulation of wealth from the soil. His threefold secret is open to the world—vision, faith and muscle.

CAME FROM A FRUIT GARDEN.

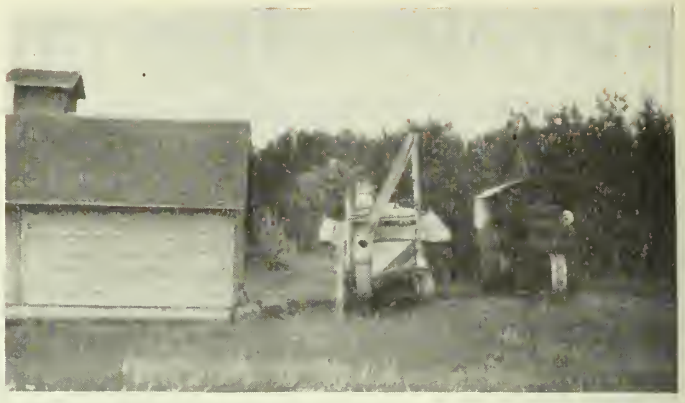
"I left England,' said Mr. Marples, "about thirty-five years ago and spent a few years traveling as young lads often do, I fancied I would like Grimsby, Ontario, fruit gardens for you know there is a fascination for the Ontario fruit gardens dormant in the minds of most Englishmen. But twenty-eight years ago after a year's travel over the West, I homesteaded here and to-day, I believe I have as good a farming proposition as there is under the British flag."

I reached Marple's farm from Hartney by automobile over a very winding trail that passed through sand dune and scrub for eight miles. The driver knew the prairie trails and short-cuts well enough to run twenty-five miles an hour. The 90 degrees of summer weather intensified the scorching breezes from a sand drift; made the sudden denouement behind a fringe of poplar wood all the more delightful. Our auto dropped from desert to paradise in the twinkling of an eye. We stopped before a vine-clad brick residence, set in a grove of friendly scrub and mature trees while near it rose a brick powerhouse from which radiating wires in all directions told the civilizing influence that a Westinghouse harnessing of the 110-volt electric current, gives to


One of Mr. Marple's electric pumps near his feed lots. Note the motor in the doorway of his shed.

The Jersey Red Hog in his yards. Note the metal-covered protecting sheds and the sensible feeding trough. These hogs reach 200 lbs. at 6 months quite easily.

The improvised implement shed. At the right side, one of Mr. Marple's self-constructed racks for labor-saving may be seen.



An enclosed metal-covered implement shed. Also the threshing outfit. The oil engine does the plowing, too. The shelter bluffs of poplar are seen in the rear. These are numerous on the farm.

modern farm life. The soil of Marple's homestead is a very fertile black sandy loam. It stands drought well, so that the dry spell that struck the Province of Manitoba at the time of my visit was having little effect on these well tilled acres.

OXFORDS, HEREFORDS AND JERSEY REDS.

Mixed farming is the only solution for Manitoba's rich areas. Wheat is the staple crop but wheat requires careful soil nursing. The all-wheat farmer does it by the expensive method of summer fallow. The mixed farmer in the future will do it with sheep and cattle and hogs. Although Mr. Marple's has not entirely forsaken the former method he has learned a great deal about maintaining soil fertility by means of livestock.

"I consider sheep to be one of the most profitable brands of livestock farming," he remarked. "At present I have only 50 head of Oxfords on the place. This is largely due to the fact that my trade in Shetland and Welsh ponies has necessitated the move. My sheep average me 10 pounds of wool for which I get 15c a pound while the lambs bring me $8 and $9 each from local butcher trade."

This makes each ewe return the farm about $10 to $12 annually while the expenditures for grain feeds are at a minimum.

Fifty pure-bred Hereford cattle are kept on the farm. These sleek animals make a pretty showing at pasture or in the barns and by reason of the keen demand for beef animals on the prairies, there is never any lack of opportunity to place the young stock at good figures. The Whitefaces are quiet and are easy feeders, while some of the cows are good enough milkers to enthuse some of their admirers into championing them as dual-purpose cattle.

The Jersey Red hog thrives well on this farm. They are kept in their yards during the summer and after harvest are allowed access to the stubble. The sows may be seen in the photo beside the metal-covered sheds that protect them from the sun and rains. In these yards there is also a small pump house wherein is installed a small motor deriving its power from the central plant.

NO WATER QUESTION HERE.

Water is easily obtainable all over the place. I can get water anywhere on my farm at eight feet," said Mr. Marples. "If I drive a sandpoint down to 25 feet I get an unlimited supply of water. I then attach an electrically-driven pump and by simply turning a button I pump all the water for the stock." In all there are eight of these small motors on the farm. Wires run in every field and threshing or grinding can be done at any point. The markets for hog products are good, whereas a few years ago the prairie offered little inducement to farmers to raise hogs, the fact that every station now sees whitewashed stockyards adjacent to the elevators, tells its own story. Seven cents a pound live weight was being paid at Hartney at the day of my visit. Mr. Marples gets his hogs easily to 200 in seven months. The Jersey Red is an easy feeder, quiet and of a pleasing appearance.

We stopped before a vine-clad brick residence. Note the water tank at the right and the profusion of flowers in the garden.

While power machinery is operated on the farm, horses are the mainstay of its operations. Several teams of Clydesdale and Percheron draughters are cared for in good stables, all electric lighted. The market for a few colts each year means an additional income.

In the winter the young horses need little attention and seem to enjoy life among the bluffs on the prairie and around the stacks of straw and wild hay.

As for hay, Mr. Marples depends largely upon the wild or native grasses in the several sloughs on the big farm. This year he had 250 tons of it put up for winter use. Occasionally he bales and ships a carload or so to Winnipeg. The cutting, raking, loading and stacking is done with all the latest machinery so that the putting up of this quantity of fodder does not seriously inconvenience men or animals.

A herd of 80 ponies, sleek and full of Shetland and Welsh beauty, returns considerable money yearly also. He has found a good market for these for children's especial use on the prairies. The little faithful horse is of great service in taking the children to their schools which often are miles away from home.

In the poultry department, Toulouse geese, Pekin ducks and Plymouth Rock fowls furnish the table and return handsomely in eggs and dressed poultry. Their rearing is an easy matter on this farm, the only danger being from coyotes and hawks. The presence of shelter bluffs is a guard against the hawks while the coyotes are kept in the background by gun and hound.

The greatest interest is attached to the wonderful mechanical appliances installed largely by Mr. Marples himself. Being of an ingenious turn he has succeeded in

The constables are fitted with all modern equipment. A water-trough at the right near a building is always full of water pumped by the pump beside the power-house seen on another page.

The barnyard is protected by trees. Here Herefords find good shelter. Ducks and geese may be seen in the yards.

transforming this prairie homestead into one of the best equipped farms in the whole of Canada.

The way that electricity has been applied to this farm will be a marvel to those who think that a prairie farm, isolated from waterfalls and older civilization cannot hope to enjoy such advantages as electric light and electric power for all the varied operations of the farm inside and outside the house.

Here on the prairie one is able to enjoy electric lights in the house and throughout the stables. Electric washing machines, churns, smoothing irons and even fans are used in the house where the latest in electric fixtures are to be seen. A fine brick garage for his touring car connecting with an engine room or power house as he calls it, stands in the rear of the house. From this electric wires go to the barns, stables, hog yards and to the several motors on the farm where electric pumps supply water to the livestock in any quarter section of the farm. Besides there is a big electric pump adjoining the garage where by the pressure of a button, water flows to the big watering trough beside the stables in the barn yard.

In this power house there is a 6-h.p. gasoline engine running a dynamo to which is attached a storage battery that will supply light for the lamps on the farm during the night without the aid of the engine. The Westinghouse system, 110 volts, was installed in 1910 at a cost complete for buildings and all of $2,500.

The gasoline engine can also operate outside machines by means of a pulley which comes through the window. A portable saw is seen at this window in the illustration.

To provide running water within the house, a sewage system has been installed that works perfectly. The septic tank has given satisfaction. Water pressure is given by gravity from an overhead tank seen outdoors to the right of the house. Every convenience in the house is arranged for. Hot and cold, soft and hard water, can be had from the kitchen, the basement and from the bath-room. The house has a Manitoba Government operated telephone that connects with any part of the West. Electric fixtures of a beautiful design are in each room. Electric fans in the kitchen, dining and bedrooms make life pleasant on even the hottest days.

Continued on page 33.

The Forty Million Acres of the Peace

Pen Picture of the Peace River Country is a Live Stock Raiser's Paradise.

By W. D. ALBRIGHT

Ringed all around us the proud peaks are glowing;
Fierce chiefs in council, their wigwam the sky;
Far, far below us the big Yukon flowing,
Like threaded quicksilver, gleams to the eye. —Service.

Already W. D. Albright, Ontario born and reared, has, by his vivid descriptions, become thoroughly inoculated with the germ of the prairie enthusiast. Up in the splendid reaches of Alberta, where mighty rivers like the Mississippi, and big fresh water lakes exist as part of the physiography of a Canadian country free to the best farmers who may come this way. The writer has done a splendid service in so graphically portraying this fertile part of Alberta. There is little doubt but that upon the conclusion of European peace there will be one of the biggest migrations to Canada that the world has ever seen. Farmers will want to settle where the war God does not brood eternally, and from Nova Scotia to the boundaries of the Yukon there await farms for millions, who will be welcome.

THE Peace River is one of the show places of the continent. Rising in British Columbia, within a hundred miles of the Pacific Coast, it cuts through a wide Mountain tableland, the highest point of which, between Dunvegan and Prince Rupert, is said to be 3,200 feet above sea level. Issuing at Hudson's Hope from a wild canyon offering bright promise of power development, it winds a placid course through an immense trough-valley, imposing no further obstacle to navigation until it reaches Fort Vermilion, five hundred and twelve miles northeast. Below Vermilion are the wonderful Chutes of the Peace, which the late Agnes Deans Cameron coupled with the Ramparts of the Mackenzie as the two most impressive visions which the whole Northland gave her. Below the Chutes is another stretch of navigable water to the confluence of the Peace and Slave. Speaking in round numbers, J. K. Cornwall says of the Peace that it is navigable for six hundred miles by boats of the Mississippi type, the physical features and transportation possibilities being identical with those of the Mississippi between Memphis and New Orleans.

It was mid-afternoon of a late October day when I got my first glimpse of this celebrated River of the North. We had approached it from Grouard over the long bush trail winding through a seemingly interminable avenue of spruce and poplar, the latter species prevailing as we neared Peace River Crossing, denoting a good and well-drained soil. "You are about to see a different river from anything you have ever seen before," observed the driver with a confident air. Travelling the last few miles through light poplar scrub, flushing jack rabbits and partridge as we drove along, all at once we emerged upon the brink of a gulch full five hundred feet deep. In the bottom threaded a tiny stream that emptied into the river a couple of miles away. The steep banks of the gulch were of chocolate-brown earth, clothed with grass and dotted with poplar coppice on their less precipitous slopes. A little farther on another gulch united with this one and the view back up the forks was something tremendous. Both gorges dipped sharply toward the main valley, the streams which had worn them out having apparently run along smoothly on the elevated plateau to the edge of the valley, where the sudden fall to water level had imparted to their minute currents a power of erosion which the subsoil could not resist. As the channels wore deeper and further back, the banks caved in and were carried away as silt, some of it to the Mackenzie delta at the Arctic Sea!

AN ENCHANTING PROSPECT!

A little farther now, and we are within sight of the Peace itself. One catches his breath at the prospect. The peaceful river, coursing its way through the bottom, is dwarfed by its setting to the proportions of a creek. Clumps of trees on the northwest bank look like bushes in a hedge row. The high cut banks with their irregularly sloping face loom up mountainous before us. Except that the jutting points of the hills all drop from the level line of the plateau instead of projecting in serried outline above it, the scene is fairly well described by our textual stanza. Cattle and horses grazing upon the hills appear the size of dogs. Two miles upstream, several islands in a broad expanse mark where the turbulent Smoky enters the Peace. Could we have followed this tributary southwest toward the Rockies and then branched up the Wapiti, from that up the Red Willow and thence up the Beaver Lodge we might have reached our destination in Grande Prairie by water. But the Smoky is not navigable. Neither is there any bridge or ferry across it near its mouth. Nor is there any trail along the southeast side of the Peace. Hence our need of ferrying the big river twice, first at the Crossing and again at Dunvegan.

The Smoky is the largest tributary of the Peace and their confluence one of its grandest scenic spectacles. A magnificent scene it is. Hundreds of photographs have been taken but they are mere apologies—pigmy miniatures of the real thing. They give no conception whatever of its colossal proportions. It challenges art and defies description.

HAS SEEN ALL CANADA.

It has been my privilege to see some of the most impressive scenery of Eastern Canada. I have sauntered in apple-har-

vest through the exquisite Annapolis, Cornwallis and Gaspereaux Valleys of Nova Scotia steamed up the beautiful River St. John; traversed the forest-clad slopes of the matchless Matapedia and looked across the full-tided St. Lawrence to the frowning ramparts of Historic Quebec. I have surveyed the first city of Canada from the summit of Mount Royal and admired the Ottawa River from Parliament Hill at the federal Capital. I have climbed Grimsby Mountain on a summer's afternoon to feast upon that perfect bird's eye view over the orchards and vineyards of the Niagara fruit belt lying checkered in the sun, with the sail-specked surface of Lake Ontario beyond and her blue shore forty miles away to the north. I have traced the winding course of the Lower Niagara from the dizzy top of Brock's monument on the brink of Queenston Heights and skirted close to the edge of the foaming, tossing, heaped-up waters of the Niagara Gorge. But for sheer rugged vastness and grandeur that fills the eye and heaves the bosom as one surveys it, none can surpass the junction of the Smoky and the Peace.

Where the turbulent Smoky enters the Peace.

And here within sight of it lies Peace River Crossing, yesterday but a small trading post, built on the bottom lands of that narrow valley, wedged in between these precipitous hills. Not much of a place was the Crossing when I first saw it a year ago. A few houses and stores, a mission, a bank or two, a couple of very small hotels, a post office, telegraph office, a ferry and two blacksmith shops comprised the most of it. There was no doctor and a prominent citizen in need of medical advice was about to set out for Grouard over the horrible eighty-five mile trail we had just traversed. But the town has been booming since then and is counting on a big future. The Canada Central Railway (a branch of the E. D. & B. C.) had been buying farms at a big price and the road is now being pushed through to that point. Somewhere along the Peace a big city will arise, which will be to Northern Alberta what Edmonton is to the center. Where the Northern metropolis will be no one can positively predict. The junction of railroads will make it, especially if it happens to be upon a navigable river. The Crossing bases hope on the fact that owing to its abruptness and depth of valley the river is difficult of approach, one of the easiest avenues being at this trading post, which has, the further advantage of affording water transportation 232 miles upstream to Hudson's Hope and 280 miles down to Fort Vermilion. Vast coal measures lie tributary to the river upstream at Fort St. John, below Hudson's Hope. A Niagara of waterpower occurs in the Peace River canyon and another down stream at the Chutes. Add to this the fact that the Pine Pass, which offers egress for Peace River railroads toward the Coast, is said to be the lowest of all the Rocky Mountain passes and you have a combination of factors going to assure a great future for one or more strategic points on this far-famed watercourse.

THIS IS THE DUNVEGAN.

But Peace River Crossing is not the only would-be Edmonton along the river. Seventy-three miles upstream is Dunvegan (pronounced Dunvagan) which long stood in our memory for furs and sixty below zero. This beautiful burg is still more delightfully situated than its ambitious rival. It stands on a low bench at a bend in the river beneath the frowning cliffs of those six-hundred-foot hills. The view through the river gap to the west is inspiring. But we were rather disappointed to find that the town consisted of only the inevitable Hudson's Bay Company store and factor's residence, an old mission occupied by the ferryman and a government telegraph office high up on the hill. Site was everything; city nothing. Time was when Indians camped by the hundred here and did business at the store. The noble Red Man has nearly disappeared, swept out of existence by small pox, measles and venereal diseases of the beneficent white man's importation. Dunvegan to-day boasts scenery and prospects. The prospects are not overly bright for the steep banks would seem to present formidable obstacles to railroad entrance. The Edmonton, Dunvegan and British Columbia Railway Charter empowers the company to build in the vicinity of Dunvegan. This is liable to mean Spirit River Prairie, fifteen miles to the south, though it is suggested that the Canada Central branch may run up the north side from the Crossing to Dunvegan. Even this is not settled. Yet lots in Dunvegan have been hopefully bought by investors thousands of miles away. An American lady who had purchased several passed through the place last year. "Where is Dunvegan?" she asked as she broke down and cried, investing in subdivision property without knowing the ground is not without elements of risk.

It was at Dunvegan I experienced my first Ihinook. After driving two days over the level plateau against a strong and rather unseasonably cold west wind, we descended into the valley in the evening sensible of a rapidly moderating temperature. By eight o'clock a soft wind was blowing like a balmy June breeze in the East. It did not freeze that night; the morning air was delightfully mellow. It was the world-famed Ihinook which moderates the climate of the Rocky Mountain's Eastern slope. The ferryman proudly exhibited squaw corn on the cob, mature enough for seed. In front of the whitewashed residence of Mr. Bedson, the H. B. Co. factor, were an avenue of Manitoba maples that gave the home an air of comfort and elegance almost semi-tropical in this Northern land of poplar, spruce and Banksian pine. It was at Dunvegan, also, where we paid thirty-five cents for a loaf of bread and where being unable to obtain any more at this moderate fgure, the writer took lessons in bannock-baking from the stalwart whimsical old French-Canadian ferryman who inhabited the upper storey of the Mission, allowing wayfarers to cook on his own stove.

THE PEACE RIVER BLOCK.

As stated above, the valley of the Peace is quite narrow, although the hills recede and lower, I believe, in its lower reaches. At the Crossing and at Dunvegan the arable soil consists of a few thousand acres of bottom and bench lands left by changes in the river's course. But the term "Peace River Country" applies to the vast area of plateau which it drains. This varies in topography and character. South of the Peace are three fine prairies —Spirit River, Grande Prairie and Pouce Coupe, the latter extending over into British Columbia, constituting what is known as the Peace River Block, administered by the Lands Branch of the Department of the Interior, Ottawa. Grande Prairie alone must embrace over a million acres of land, or speaking roughly, the size of Prince Edward Island. North of the river, between the Crossing and Dunvegan are seventy miles of nearly level land as fine as lies outdoors. It is dotted

Continued on page 68.

Women Making Money With Bees

By THOS. McGILLICUDDY

A fascinating and profitable business for women, but occasionally the work of an apiary requires a man's help.

A Symposium Showing How Women are Averaging $10 Cash Profit Per Colony

"SWEETS for the sweet," is an old saying, and in this connection it at once suggests an affinity between women and the handling of honey.

IS HONEY PRODUCING A RIDDLE?

One of the most ancient of riddles is that recorded in Holy Writ, where Samson for seven days puzzled the thirty young Philistines with: "Out of the eater came forth meat, and out of the strong came forth sweetness;" alluding to his finding honey in the sun-dried carcase of a lion which he had killed some time previously.

The popular mind still regards honey production as somewhat of a riddle, whereas to those instructed in modern apiary work it is a simple science with a few plain leading principles; an art with its well tried rules and practice; a trade or occupation that will bring profit and pleasure to those who will intelligently and industriously engage in it.

IS BEEKEEPING A WOMAN'S JOB.

Often, indeed, has the question been asked: "May women successfully enter upon beekeeping as a means of livelihood?" But seldom, if ever, has the question been thoroughly dealt with by those who are best able to answer it—the women who really know.

A QUINTETTE OF WOMEN EXPERTS SHOW CAUSE.

The compiler of this article has chosen five of the best known women beekeepers in Ontario to tell from their own viewpoint, and not in reply to a bald schedule of questions, why beekeeping offers an attractive and profitable field of activity for their sex. It also happens that geographically the members of this very able and representative quintette are pretty evenly distributed over Ontario, their apiaries ranging from Lake Huron to the banks of the St. Lawrence; thus showing that beekeeping may succeed in practically any portion of the province.

Mr. McGillicuddy has been identified with agriculture for a lifetime. As a member of the staff of the Agricultural Department in the Ontario Government, he has excellent opportunities to pass upon the merits of any particular branch of farming operations. Moreover, Mr. McGillicuddy has taken a deep interest in socio-political work, and his force as a lecturer in many Ontario towns is well-known. Beekeeping is recognized as a highly profitable branch of rural work. Although his references are confined entirely to women's work in his own Province, the conclusions really apply to all Canada. The variations in climatic conditions between Thunder Bay and Essex are so great as to make these experiments of national value.—Editor.

Hiving a swarm. The experienced apiarist has no fear of stings.

WOMEN ARE WELL FITTED FOR MANAGING APIARIES.

All of the contributors to the symposium are of opinion that women may successfully practise beekeeping. In fact, one of them, Miss Scott, avers that it is an occupation for women rather than for men. Miss Robson also believes that the work is particularly adapted to women. Mrs. Hamm thinks that a woman can support herself by operating an apiary, but insists that her heart and energy must be in the work. Mrs. Deadman says that beekeeping will have a fascination for the woman who engages in it; while Miss Treverrow complements this when she remarks that the occupation is one in which woman's disposition can have full play.

The quintette admit that occasionally some of the work in an apiary is too heavy for a woman to perform, but they very bluntly and practically remark that such mere manual labor—the accent on the man—is comparatively easily secured in every locality.

THERE ARE ALSO PHYSICAL AND SOCIAL REASONS.

Some of the five also refer to the healthfulness of the occupation, which demands considerable outdoor employment, and this is a strong point in its favor.

The fact that woman may conduct apiaries not only on the farm, but also in villages and even in the suburbs of towns and cities, is a very important argument both from an economic and a social point of view.

COST OF INVESTMENT.

Estimates of the cost of the equipment of an apiary, as given by our special contributors differ somewhat. The prices for

A view of the Scott Sisters' apiary at Meyersburg.

a hive of bees, for instance, as given, range from $5 to $10. Of course, this being a record of ladies' purchasing, "bargains" at auction sales or otherwise figure in the smaller price quoted. An average cost of $8 per hive may be counted upon. Supplies for apparatus and other needful equipment for a not too small working apiary—say one of forty or fifty colonies—would demand an additional investment of perhaps $100, or a total of about $500; which certainly is not great considering the annual turnover and almost certainty of profit. Miss Treverrow very fairly points out that such an amount is small compared to that which would be necessary to set up a woman in any equally lucrative business.

If, however, it is necessary, either from a spirit of caution, or for lack of funds, that a woman should go into beekeeping on a small scale a start may be made with a few hives, etc., at a cost of $100, or even half of that.

WHAT ABOUT PROFITS?

Here, also, as might be expected, our contributing experts disagree. Locality, market, and other causes likely combine to make up the differences of opinion given.

Mrs. Hamm says that fifty colonies, spring count, should bring in about $400, or about $8 per hive.

Miss Scott places the profit per hive at from $5 to $15, according to the season and locality, or an average of $10 per colony.

Miss Robson puts the net profit per hive at about $5. On her 65 colonies last season she cleared between $300 and $400.

The late Mrs. Deadman, when interviewed, went more fully into the matter of profit and loss than any of the other contributors. She placed the annual revenue per hive, spring count (including increase by swarming) at fully $10 in a good average season, although she admitted—giving an instance—that very poor seasons sometimes occur.

It should be observed, also, that for months together the bees require little or no attention, which will permit the thrifty woman beekeeper to devote her time and talent to other work which may add to her income.

But perhaps it is best to permit the fair five to tell their own story in their own way.

MRS. FRED HAMM, BATH.

Mrs. Hamm writes like a woman who knows what she is dealing with, and she has the reputation of being an expert in bee management. See how she gets at once to the point:

"Do I think a woman could support herself keeping bees? Yes, most decidedly; but the woman who undertakes to do so should expect to put as much energy, as much care and thoughtfulness, and as much close attention to detail in the work as she would in any other vocation. It is like so many things; the very minute details seem so little but count so much.

There is, in my opinion, no successful method of keeping bees unless one's heart is with the bees, both with regard to profit and pleasure. These essentials assured, success is certain.

How many colonies could she manage? The number of colonies a woman could manage is limited only by her experience and ability. There are men who manage hundreds of colonies in yards ten, twenty, or thirty miles apart, and there is really no reason why a woman could not do the same. This does not mean that she must do all the work, but it means that she must furnish the brains and hire help to furnish the brawn; and it is quite proper to say that there is much work in an apiary which requires the strength of an able-bodied man.

Miss Ethel Robson, vice-president of the Ontario Bee-Keepers' Association.

How much profit could fifty colonies, spring count, bring her? Fifty good colonies in an average season in a fairly good location should bring her $400."

MISS MARGARET W. SCOTT, MEYERSBURG.

"Boost beekeeping for women" is the slogan of Miss Scott and her sister, and she gives the following excellent reasons to warrant it:

"In my opinion beekeeping is an occupation for women rather than for men. Unless a large number of bees are kept it hardly pays a man to spend his time on them, while a woman can care for say fifty colonies if they are near the house, besides looking after the household duties.

"There is no reason why more women should not take up beekeeping as a business. (It is more than occupation, it is business). It is interesting, pleasant, and profitable. However, if one does not wish to work but merely to do something to *occupy* the time, leave bees alone; for modern beekeeping requires skill, patience, determined perseverance, and downright hard work.

I think much of our success is due to two big brothers, who are always willing to saw, drive nails, extract honey, press wax, or anything else we want them to.

"The average profit is very hard to estimate. So much depends upon locality, crop, prices, weather, and the care taken of bees. For instance, last season some of our best women beekeepers averaged only $5 per colony. Our locality was better, and we averaged $15 with very little fall flow. (Some places have no fall flow any year; we always have "lots" of buckwheat.) Thus, you see how much depends on circumstances.

"The expense per colony is varied. Here we have had the pleasure (?) of entertaining a guest known to beekeepers as European foul brood, and although it has long since outworn its welcome, it is loth to depart. The expense entailed in treating this disease is considerable, and where there is no fall flow of honey feeding for winter is another item in the line of expense.

"Taken altogether there is much to gain and little to lose, so hurrah for the bees, stings and all!"

MISS M. B. TREVERROW, MEADOWVALE.

Miss Treverrow has been successful in beekeeping, and has written several interesting and instructive papers on the subject for the Ontario Beekeepers' Association. She says:

"Beekeeping is an industry to which women are turning in yearly increasing numbers. Like every pursuit that man or woman engages in, as a means of support, it is good or bad, successful or unsuccessful, attractive or otherwise, according to the indivdual who undertakes it.

"Every business requires to be thoroughly understood by the operator if it is

to be successful, and to no business does this apply more truly than to beekeeping. Woman's natural disposition to be careful, painstaking, watchful and energetic has full play in this occupation, as there is so much to learn, to interest and to do, in carrying out all that is required of her during the beekeeper's harvest.

"Out-of-doors life for women during the summer months is especially beneficial to health.

"At the present time beekeeping is attended with considerable profit to the expert apiarist, and the amount necessary to set a woman up in the beekeeping business is small compared to what would be required to start in any other such lucrative pursuit.

"Woman's generally conceded inability to finance a business is overcome in beekeeping (in Ontario at least) by the aid afforded by the Honey Exchange or Crop Committee, who send out to each beekeeper a list of prices that should prevail for the season."

MISS ETHEL ROBSON, ILDERTON.

Miss Robson is perhaps the most prominent lady apiarist in the Dominion. Public spirited, a good speaker and debater, withal most womanly, her ability and experience have been much appreciated by the Ontario Beekeeper's Association, which has not only requested contributions from her in the way of convention addresses, but has also elected her to the office of vice-president of the association. Miss Robson says:

"For the girl who wishes to make her living in the country there is probably no business which offers a better opportunity than beekeeping. The capital required for a start is comparatively small, brains and perseverance count for more than money, and with the present improved markets the returns are sure. The work is particularly adapted for women as it has to be done in good weather, the greatest objection is the somewhat heavy lifting; best of all it is sufficiently interesting to be absorbing. The stings, so appalling to the uninitiated, always hurt, but unbelievable as it may seem you get used to them, and it is not like hanging either, you don't have to die first."

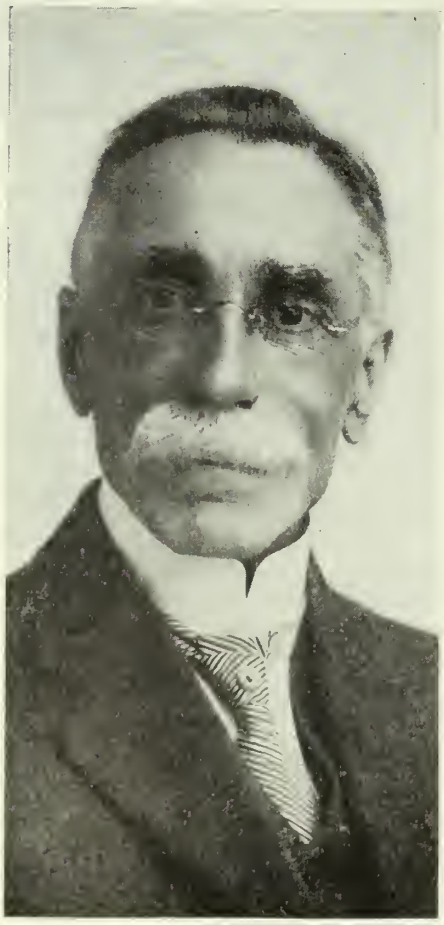
"The question of profit in beekeeping is a difficult one to answer definitely. A hive of bees is usually valued at about five dollars. I myself bought some for four and some for five this spring; then we picked up a few odd hives at sales for less than this. However, you cannot count on this as it is only in case someone has died or is going out of business that you can get them for this. If purchased from a regular dealer they would cost much more. Supplies for running fifty colonies would be worth at the least $100. As for profits $5 per colony ought to be a fair average, though this is dependent on so many circumstances that the statement does not count for much—location, kind of nectar-bearing plants, condition of bees, feed required for winter stores, the season, etc. Last season, with a spring count of 65 colonies, I had between three and four hundred dollars clear."

(a) The worker bee, (b) the queen, (c) the drone.

MRS. G. A. DEADMAN, BRUSSELS.

The late Mrs. G. A. Deadman, of Brussels, for thirty years assisted her husband in managing their large apiary, and she understood the business as few persons did. Speaking recently to the writer on beekeeping for women she remarked:

"The apiary has an attraction—yes, a fascination—for the woman who goes into beekeeping. It certainly had for me. Then it is a healthful occupation, for it is outdoor work, largely, and it gives one a change of work and thought. Some heavy lifting is necessary now and then, but assistance is generally available. However, the woman who enters upon beekeeping must make up her mind to give all her time to it during the busy periods of swarming and extracting—say during June and July. After that there is packing, bottling, labeling, etc., to be attended to, although this can be lightened by selling in bulk, which is usually the better way of disposing of the honey. But for months together the bees require little or no attention."



Mr. Thomas McGillicuddy.

In reply to a question as to how beekeeping would repay a woman, Mrs. Deadman replied:

"Profits, as in other occupations, will be variable. The value of a hive of bees ranges from $6 to $10—nearer the latter mark, usually. Then there is a certain cost for appliances; say $100 in a small apiary. Yields of honey range from 25 to 100 pounds per hive; but taking one year with another a good beekeeper should average 70 pounds to the colony, spring count. This, with the value of the natural increase in colonies by swarming would make the annual revenue per hive $10, or perhaps a little more. Forty colonies of bees, therefore, should bring a woman beekeeper about $400 for a few months' steady work, leaving her considerable time for other employment.

"As to the honey flow, much depends upon the weather, which may be just right, or it may be too dry, too wet, or too cold. The honey is made chiefly from clover bloom, and the blossom of the linden or basswood tree. The buckwheat bloom late in the season is also much appreciated."

Mrs. Deadman, paused, smiled, and then shook her head in a deprecatory sort of way as she resumed:

"But just to show how the honey crop varies. I would say that one year (1911) our apiary failed us, and we netted only about 200 pounds from some 300 colonies. It was our worst year. But the next season, although about one-third of our bees had been killed off, we sold fully 12,000 pounds of honey."

In closing, Mrs. Deadman laid stress upon the following important bit of counsel:

"The woman beekeeper may be born such, but even then if she be wise she will serve a real apprenticeship in the business. She should visit some well-conducted apiary, and spend the honey season of say two months there even if she gets no remuneration for her labor. Then she should start for herself with only a few colonies at first, enlarging her apiary as she gains experience."

OPINION OF THE PROVINCIAL APIARIST.

To this strong testimony is now added the opinion of Mr. Morley Pettit, Provincial Apiarist, Guelph, who is regarded as perhaps the leading Canadian expert in the honey-yard, which renders complete the case in favor of women as beekeepers:

"Through force of circumstances more women keep bees in Ontario than the records show. On most farms where bees are kept the hives are near the house for convenience, placed where they can be watched for swarms from the kitchen door or window. At swarming time the men are at the farthest part of the farm, so the farmer's wife or daughter must either go for male help or hive the swarms herself. There is no obstacle in beekeeping which a woman cannot overcome with some ingenuity."

Land O'Gold: By JUSTUS MILLER

Illustrated by MISS MARY V. HUNTER

Where the Road Turns—A Business Future, a Fairy God-Father and a New Scheme for the Old Farm

SYNOPSIS OF PREVIOUS CHAPTERS

Land o' Gold is the name of an Ontario farm in a well settled district. An only son who is brought up there finds the mortgage and the unintcresting succession of chores and resultless toil to be a hindrance to his future, and so cuts loose from the farm. He sees it is an education he wants and so decides to attend the agricultural college, but lack of funds drives him into newspaper work at Ottawa. His visions of usefulness are soon destroyed by the sordid grind of the editorial room and he drifts to departmental work, only to detest its blank future. At a Sunday school picnic he meets Grace, the daughter of a lumber king, who sets his imagination on fire. Just as he so plans a telegram from his father at Land o' Gold contains fateful news. His father has been injured at a barn-raising and is unconscious when he reaches home. After the death of his father he decides to carry out his wishes to make Land o' Gold pan out. When he would feel discouraged, visions of Grace appeared before him and he felt that he could not fail. He makes a study of farm conditions and decides that proper business management would settle most of the difficulties confronting the farmers of to-day. He tries up-to-date methods on the old orchard with such gratifying success that he feels safe to borrow the insurance money from his mother and rent sixty acres of old orchard in the neighborhood. In the meantime, Molly makes plans to brighten the social atmosphere of the community, and organizes the "Jolly Old Folks' Club." In the fall the old house at Land o' Gold is remodeled. While Jimmy is preparing to organize a county co-operative association and looking forward with characteristic eagerness and humility to Grace returning Molly's Ottawa visit, his hired man, Jake Smith, breaks the news that he wants to start for himself. He has to make good, because he's in love with Molly. This is the beginning of the Jackson and Smith partnership. The next two weeks "pass like a fairy's breath," and then one day in the orchard, just before Grace goes home, Jimmy tells her what he has wanted to say for three years. Then he goes back to the farm game in earnest. He has something definite to work for now.—Editor.

I MENTION it because this was really my start. It brought me to the attention of prominent men outside. But the formation of the co-operative wasn't the great event of 1908 for us at Land o' Gold.

In April Molly and Jake were married. I had taken an office in Albert early in the month as the headquarters of the association. As I drove out to the old farm I mused sadly of the day over three years before when I had come home to find my father dying. Poor Dad, if only he could see us now.

Perhaps he could. Who can tell?

But I would not be sad at my sister's wedding. Molly cried a little and laughed a little in my arms while Jake grinned bravely and looked extremely frightened. Altogether it went off nicely. Best of all Jake and Molly and mother were to keep old Land o' Gold alive yet awhile.

"Oh, Jimmie," whispered Molly just before they left, the Jolly Old Folks were here last night with a kitchen shower and every one was present, even to Mrs. McBeth and poor old Mrs. Todd. Wasn't it just lovely?"

But there was one cloud in my sky—and a very black one. Grace was not there.

I wondered at that and so did the others; but my doubt was drowned in a great joy a few weeks later.

"How dare you carry off my daughter, you young rascal," yelled John Adams, hammering the top of my desk. "I'll have the ——"

"Will you kindly shut up or get out," I snapped back.

The old gentleman gaped at me with with his eyes protruding. It had been many years since the yard foreman had "cussed" him at the mills.

"You have bullied Mrs. Adams and Grace so long you've grown into the habit, but you're going to stop so quickly now it will hurt," I continued. "I know you go to church regularly and you never cease quoting the scriptures—to prove your own point—but I'm going to tell you something that will surprise you.

"You have worn religion as a cloak. You worship a golden image. You are a shallow fraud, sir, and you know it. You have grown bitter and hard, and have delighted to tear the heart of your wife and of Grace simply because your character has turned to mud and you've tried to hide it. You hate yourself and you hate your family. You hate everything but money and it is squeezing your heart dry. You dare not let the world know all this so you wrap your wife's and daughter's skirts around you to hide behind their respectability. You disgrace the name of a white-man. Get out."

The old man just stared at me. All the wrongs Grace had suffered surged up into my brain and I didn't care much what happened. I guess I glared at him like the wild man in a circus. And just then I saw Harvey's evil face peering through the doorway.

"I wish I were you—young and innocent and weak."

"How dare you talk to Mr. Adams like that," he gasped, walking in. "I say, how dare you? Do you get that, sir?"

I didn't, but he did. He got it in the gold teeth. It was the most delightful wallop I'd given since the time I caught Ned Hudson on the jaw at the boxing tournament back at the O.A. College.

A couple of hundred dollars worth of teeth scattered around the floor and Harvey scattered for his automobile.

"Get out," I yelled, pointing to the door. "But—but," gurgled the old man. "Get right out, I tell you." And he got.

It was a sorry climax to a most happy little wedding trip in the solitude of the Laurentian mountains back of Hull. And I hadn't run away with Grace, either. She had written me to come, so I had met her at the New Russell. We had got married that night with her mother as witness. Then we had gone back above Old Chelesa to Kingsmere Lake in the mountains. Everything entirely so-so, you see.

The beautiful June weather blew the tingle of the encounter from my nerves by noon. I was a little sorry then I had talked to Mr. Adams so hardly, but the swing at Harvey had lifted a cloud from my heart.

"Why Jimmie, you've hurt your knuckles," said Grace, anxiously, as she met me at the gate.

"Oh, it's nothing," I lied cheerfully. 'just caught them in the door."

I thought of the teeth rolling around my office and of that one grand moment. And I threw back my head and laughed as I passed my arm through hers.

"Isn't it a grand old world after all," I smiled down into a happy little face.

And now I suppose it's time for this story to close, you will think. Marriage seems to be the goal that most novelists strive for. But this is a tale of real life. A farmer's marriage is just the begin-

ning. His wife and family and home and his business are so closely connected that his story really begins there. That is the difference between a farmer and any other man. Farming is more than a business. It is a scheme of living.

That was six years ago. Many things have happened since then. Our association has grown stronger each year. We always have a few kickers who object to my commission, but their influence is slight. The association, however, has not had entirely smooth sailing for all that, owing partly to foes within the camp and partly to the unsettled condition of the apple trade. The second year local buyers threatened to break the association. One day a member came to the office with a hard luck tale. He had been offered a larger price for his apples than the association probably would pay. It was alright for fellows like me, he wailed, who could sit in an office and go out automobile driving, but hard working men with a family had to live.

And the year before the same grower had made a cool profit of six hundred dollars over and above buyer's prices, plus commission by trading with the association! It just shows the little business some men are led into by the bony nature of their heads obscuring the big money to-morrow.

I motored out to his orchard and saw that the buyer was bluffing. The crop wasn't worth his offer.

"Well, Tom," I said, "let him have it. I'll take the responsibility of relieving you of the fine imposed by the association. Only remember that we won't buy your fruit this year if you double cross us now."

The wily buyer promptly went back on his deal when he learned the turn affairs had taken. The grower tried in vain to sell through us and finally sold considerably below our figures. Next year, Tom was one of our strongest supporters and remains so still.

This was not the only case of this kind that occurred . Occasionally, of course, a grower may have found it possible to obtain a slightly higher rate for his produce than that for which he obtained through us, but this would only be in perhaps one case out of twenty. In the other nineteen cases he would do far better through the association. Yet, such is the perversity of human nature, that every time such a case occurred the grower would not fail to make a big song about it, and many a time I have had to argue it out with them and explain that though in that particular case they might have made a few dollars extra, yet taking it all in all, they were far better off in dealing through the association.

"Isn't the moonlight beautiful?" she whispered. "What a grand old place this is, among the orchards and the people you have worked for."

One day I got a scare during this same fall. One inspector had his apples at the track and was loading. Accidentally a barrel was broken open, and it revealed the same old crooked story. Davidson promptly wired me.

"Pull every barrel of that man's pack out of the car," I ordered. "I wouldn't have a barrel of bad ones in that Chicago shipment for a hundred dollars. Make a rigid inspection of every barrel and mister man will pay for the hold-up."

After that one man, at least, knew where I stood on the grade question.

We have met the uncertainty of the trade as best we could. It exists to-day not because there is an over-supply of apples, but because there is an over-supply of inferior apples. Buyers are shy of Ontario fruit. In spite of our honest grades, prices will fall flat sometimes. In one year of low prices I only charged ten cents a barrel, to help out the boys.

Lately we have been shipping a printed slip in each barrel which explains the difference between cooking and dessert apples, the best varieties of each; and which has the enclosed variety stamped conspicuously upon it. The results are just coming in. We find a little stronger demand for our finest varieties and we believe that our educational work, in a measure, accounts for it. We expect important developments in the future from our policy.

This year we packed a trial shipment in boxes, and are so well pleased with the result, that next year every No. 1 apple of our best varieties will be handled in this manner. Indeed, we are seriously considering the shipping of No. 1 quality of each variety only. Some such method must be employed at once to restore confidence in Ontario apples. Moreover, we have demonstrated an eighty-five per cent. crop of No. 1's in a rather unfavorable year.

To publish our name far and wide we have sent a large display to the provincial flower, fruit and honey show, held at Toronto, and have taken the majority of prizes three years in succession. As a result we are becoming noted and the value of our land is steadily rising.

Since those days Jake and I have enlarged our plant. We have one hundred acres of young stuff set out—Spys, Snows, and MacIntosh Reds interplanted with Dutches and Wealthies. We own and rent one hundred and fifty acres of bearing orchard. For there are still a few shiftless ones who will rent in preference to exerting the requisite brain labor to work their own orchards.

My salary has reached pretty large proportions, too. This year I made in commissions alone, ten thousand dollars, although I had to pay the inspectors out of that. Besides, I made a commission on the spray material and other supplies —all of which the association handles at reduced rates—and it is not a small sum. A couple of years ago I became engaged in a venture that promises still greater things. I have a word to say of this before I finish.

But more than money to one of my temperament, is the influence I exert. I am infinitely more powerful in my world than is the four thousand dollar a year seed commissioner in his, or than was the twenty-eight hundred dollar editor before he "retired" from old age at fifty. Three years ago when the Dominion was in a ferment over the reciprocity question, some wondered that our county turned over. Many ascribed great powers to Charlie Goodwin. But it wasn't Charlie who won the election. It was Jimmy Fruit Jackson.

After the encounter in the office I heard nothing from Mr. Adams. Grace told me her mother wrote that the old gentleman had said one day he expected to see me get on. But I never told of our little bickering nor did he.

Grace never went home, but the dear little mater-in-law came down sometimes to see us.

"Why don't you leave him and live with us, little mater?" I begged her. "Your life is miserable there. Let Grace take care of you."

"I can't do it laddie," she smiled through her tears. "Don't ask me. I just can't."

Who can fathom the depths of a woman's soul! She never forgets.

After little Jake was born the world opened wide. I used to carry the chubby little fist-full with a quickened heart. I dreamed dreams over his wee head. Then I knew for the first time what Dad's heart was made of. Dear old Daddy! He is coming back to me more often now, since I'm a father myself.

Motherhood ripened and mellowed Grace in a way that was wonderful to me. The violets of her soul expanded and grew and blew until around her all was fragrance. Whenever a deal goes through in these days and a chance comes to make a clean-up by crooked work the vision of those clear eyes comes before me.

"Jimmie,' I whisper, "my boy, you've got to buck up. A thousand crooked shakes a day by the other fellows will never excuse one you make. The gold is alright in your hands, but you've got to keep it away from your heart."

One day just after little Jake had discovered his feet the old gentleman blew in. It was in the evening and I didn't know whether a fairy god-father or an explosion was upon us.

"Let me see the child," he said abruptly.

"He gazed at his little fair face for a long, long while.

Suddenly he was crying.

"God, I wish I were you—young and innocent and weak."

"I am getting old, Jimmie," he said. "My days are numbered now. I don't know what makes me cry. Perhaps something of the softness of the little one comes back to me. I remember when little Grace was like that. I dreamed then too. But I wished a prince for her. Perhaps it is better as it is."

From that day the sun shone again in the little mater's heart. The stern old daddy spent much time with us, and the babe brightened his eyes. Since little Grace came I hardly know where he lives. But I think our home is the headquarters. Next fall the old couple and my mother are going to Florida. Often the roads seem very long, but I have never known one yet without a turn somewhere, sometime.

Two years ago last May a middle-aged man with shrewd twinkling eyes was shown into my office.

He didn't waste any time in preliminaries.

"See that?" he exclaimed, plumping down a package upon my desk. "You've never seen anything like it before. These are Superior Sanitary Evaporated Apples. See the three-pound carton. Looks like a breakfast food packet, eh? Five years from now they'll be just as common. Fortunes in it, for the manufacturers! How would Robinson, Jackson & Company look on that? I'm Robinson."

"Well you've got your nerve with you alright!" I ejaculated.

Nevertheless I was impressed with the man's argument. I was quick to see, too, the possibilities that lay in that carton. The two red apples on the outside would make consumers want to test the contents.

"Just listen to a story I've got wrapped up in this noddle of mine before you say anything more," said Robinson, seeing he was sure of a hearing.

"I have had a chequered career. For many years I was a farmer and a lumberman. Now I am in the apple business.

"My life has been a series of lessons. I learned one while lumbering that has assisted me in my work with the manufacturing and selling of food stuffs. One winter I made a contract to manufacture 2,000,000 feet of pine in the north of Norfolk. I did all the sawing and bookkeeping myself and supervised the cooking. I purchased my supplies from Bill Smith's stores at Eden, and bought the finest bacon, butter, eggs, sugar, beans and syrup I could purchase.

"Why do you run your business this way?" Bill asked me one day. Don't you know the other fellows are not giving their men grub like this?"

"But I had learned to my satisfaction that it was economical to buy the best food. It paid me to do so, in two ways.

Two years ago last May a middle-aged man, with shrewd, twinkling eyes, was shown into my office.

In the first place I made it all out of the men in their work. In the second place there was no waste.

"That is why I am engaged in the evaporated apple business to-day. I know it pays to buy the best and I am sure the people, generally, are willing to pay well for it. All persons supplying food materials, whether raw or manufactured, must produce the finest quality to make the largest returns.

"Now I knew the evaporated apple business wasn't conducted along these lines. Why I can take you to one building right now where the lower story is used for a hen-house. In the same village another building has been turned into a horse-stable. Almost every building is a gloomy dirty old mill that has been pressed into service. Maybe it was an old barn and maybe it wasn't. Now, aren't these fine plants in which to manufacture food? See my point? See the chance for advertising?

"I visited several plants while in operation. In one I found a dirty old woman crawling over heaps of apples in the curing house, selecting fine stuff to face the cases with. In another the stock was being shipped away with practically no curing at all. A self-respecting pig would turn up its snout at that mess four months later.

"Now I saw an opening. I didn't forget my food experience in the mills. I decided to manufacture a clean food product. So I got the very latest machinery and built the most sanitary building I could. I made cleanliness my motto. I sent my three daughters in there to show the girls how to keep clean. I had running water installed and at every shift had the operators and trimmers wash their hands thoroughly.

"I had the stock thoroughly cured also. It was stirred and turned until two weeks after the evaporator closed. It should never be sold until mid-winter whereas much is sold by some manufacturers in the fall.

"And then I struck the idea of that carton. The old fifty and twenty-five pound cases made fairly good coffins but they were never intended for evaporated apples. This age demands the finest food products and it will pay for them, too. So I devised this carton. It is the first one ever sold in Canada. I have the two apples on it to attract attention. Then the name creates a desire to know more about it. Why this age is sanitary crazy. Next they pull off the top—and there you are. The quality does the rest.

"Last season was my first year and you know how evaporated stuff hung. Things didn't look very favorable for me. But I wasn't frightened—not very much—for I knew that every carton contained exactly what was advertised.

"I tried to find a market in the East, but was unsuccessful. In Belleville, Ottawa and Toronto I couldn't get a man even to look at my apples. Then I went West. In Winnipeg, Saskatoon and Regina it was the same story. Some men would not examine my goods and those

Continued on Page 50.

Van used for hauling blueberries to the wharf. Note the piles of crates in the background.

The Blueberry Harvest in Nova Scotia

By W. A. CRAICK

The Crop in Yarmouth County is Worth $75,000 Yearly. Progressive Farmers Making a Specialty of Berry Ranches.

The blueberry barrens of Nova Scotia provide a profitable field of industry for the enterprising farmer. The writer visited the Maritime provinces this summer and gives us here a most interesting description of the methods used in harvesting, packing and marketing the fruit. Although this is a wild crop which will not thrive under cultivation, the best care and skill of the fruit man in sorting and packing is most important if the berries are to bring the highest price on the Boston market. Every reader will be interested in this generally little known Canadian industry. —Editor.

THERE is a certain picturesqueness about the blueberry industry of Western Nova Scotia that renders a study of its various features one of considerable interest. In their season blueberries exceed in quantity, if they do not excel in value, the exportation of fish. Their harvesting occupies the attention of a goodly section of the population, who derive from their sale a large portion of their income. And in the gathering of the fruit methods are employed that distinguish this particular berry industry from any other.

The market for blueberries, as for most Nova Scotian natural products, is New England. While by no means the only source of supply, Western Nova Scotia and especially Yarmouth County send over a very large proportion of the blueberries that find their way to Boston during the season. In August and September the daily line of steamers which ply between the ports of Yarmouth and Boston carries thousands of crates. Some years when the berries are most plentiful the total export runs as high as twenty-five thousand crates, though ordinarily shipments range in the neighborhood of sixteen thousand crates. The biggest shipment for any one day in the history of the port was two thousand crates and then an extra steamer had to be placed on the run to accommodate the excess production.

The blueberries, are of course of the wild variety. On the barrens which extend over a great part of the interior of the province, blueberry bushes abound and tremendous quantities of the fruit are produced. Millions go to waste each year, it being quite beyond the power of the pickers to cover all the berry-growing districts. As it is, they gather a huge supply of them and it is known that some of the inhabitants of outlying villages depend for their livelihood entirely on berry-picking. Be this as it may, the blueberry industry has become an important one and brings a good deal of American money into the province.

On the whole the blueberry barrens are free for all and anyone is at liberty to go out on them and pick berries to his or her heart's content. The pickers often leave their homes altogether and camp out on the barrens, living there all through the season and until the crop is harvested. Some make their temporary homes in big canvas-covered ox-carts in which they move about from point to point like gypsies. Others bring tents and form little canvas villages. Still others erect rough wooden huts that serve from year to year. The writer remembers being in a small Acadian village in the interior of Yarmouth County on the occasion of an election when it was necessary to send some miles to the berry fields for the majority of the voters. They had all left home and were living in tents on the barrens.

In this connection mention might be made of the enterprise of an American capitalist, who has been in the habit of coming to Nova Scotia for several years and their outfitting quite a little army of pickers. These people are comfortably accommodated and well paid for their work and they move along wherever the fruit is most abundant. The capitalist is reported to have made quite a good thing each season out of his expedition.

Then again of late years some of the more progressive farmers of the county have been making more of a specialty of the blueberry business and have started what they term berry ranches. These tracts are of course preserved and no one is permitted to gather berries on them. The result is that the ranchers are able to pick just the fruit they want and by gathering only fine large berries, they obtain a better price for their boxes.

The fruit is picked direct from the bushes into the ordinary type of wooden quart box. Thirty-two boxes go to a crate and it is regarded as expert picking for one person to fill a crate between sunrise and sunset. An exceptionally fast picker may be able to fill two crates and cases have been known where as many as three crates have been picked, but the fruit must have averaged pretty large to make this possible.

The crates with empty boxes are sent out to the ranches, are filled and sent back. Before the opening of the railway running along the south shore, most of the loaded crates were driven into Yarmouth on ox-carts and it was a picturesque sight to see sixteen or seventeen

of these old-fashioned outfits on the Boston steamer dock, discharging their heaps of crates for shipment. The advent of the railway has, however, changed all this and now the crates come in by express, being sent from Pubnico, Belleville and Tusket stations, which lie near the blueberry barrens.

Not so long ago, it was the custom for berry pickers to sell their fruit to buyers in Yarmouth, who in turn sold the fruit to buyers in Boston. This tended to make the price a uniform one, no matter whether a berry picker used care in selecting his berries or not. This practice was altered a few years back and the way the change came about was this. A man in Tusket got the idea in his head that his berries were superior to the average run of fruit that his neighbors were sending to market. He was a neat fellow who took some pride in the way his berries were put up and who only selected perfect fruit for delivery. Yet he was only obtaining the same price that his less careful and painstaking competitors were receiving.

This man drove to Yarmouth one day and interviewed a shipper. The result of his conference was that he took home with him several new crates and boxes. In the course of the next few days he filled these with the choicest berries he could find and returned them to the shipper. The latter sent them immediately to a commisison merchant in Boston who promptly put them up for sale to the best bidder. It was an experiment but it succeeded. The buyer for a large hotel noticed the fruit, observed its superiority and bought it in at a good round figure. At the same time he sent word through the commission merchant that he wanted more of the same brand. This encouraged the Tusket man and he began to develop the fancy berry trade. As a result, when the ordinary run of boxes brings twelve or thirteen cents, the fancy dealer gets as high as eighteen cents for his goods and nowadays the bulk of the business is done on the commission basis.

Those interested in the blueberry business have come to realize the necessity for careful packing. If the "blue" is to remain on the fruit, which is a prime essential to its most favorable sale, steps must be taken to pack it so that the bloom will not rub off in transit. The fruit must be boxed in such a way as not to jostle, for if the berries are at all loose they are bound to rub together. In filling the boxes, therefore, the fruit is heaped up and rounded off. Then when one box is placed on top of another the berries in the lower box are held tight and cannot roll about.

From time to time attempts have been made to cultivate the blueberry but without any great degree of success. It grows wild and while it bears in such profusion there is little object in going to the expense of cultivating it. It has been noted of the blueberry that all that a farmer need do to make it grow is to burn over his pasture land. The bushes then seem to spring up naturally on the burnt ground. As it is, the barrens where the fruit now grows in such quantity were originally covered with woods which have been burnt over at some time or other.

The men who ship blueberries from Yarmouth claim that their product is the finest that reaches the Boston fruit market. There seems to be something in the climate and soil of Western Nova Scotia to develop the fruit to its greatest perfection. While berries from Maine and New Brunswick make excellent pies, in their opinion the Nova Scotia berry takes the prize as a table fruit. The latter averages a good size and has plenty of "bloom" which are two characteristics that must always be taken into account in judging blueberries. The shipments from Yarmouth are invariably well received and are always in good demand.

It has been estimated that the blueberry crop is worth to the pickers in Yarmouth County about $75,000 a year. While this is not a very large sum in the aggregate, it means a lot to the class of people who follow this occupation in summer. They are for the most part humble French Acadians to whom a dollar stands for a great deal. The blueberries are a sort of godsend to them, coming without any effort on their part and ripening over quite a length of time. Beginning early in August they have been known to keep on maturing as late as October or a period of nearly three months.

Why Not Bigger Yields?

If One Kernel Will Yield 60 kernels, Why Not Two Bushels Yield 120 Bushels?

By W. D. ALBRIGHT

"WHY is it," asked a business man who takes an amateur interest in farming, "that whilst it is possible for a single seed to yield increase of thirty, fifty, or a hundred fold, we ordinarily obtain such meagre or moderate returns in field practice? There must be some big leaks somewhere." His remark set me thinking. It stated the matter so definitely.

Sure enough we sow six to eight pecks of wheat, reap twenty-five or thirty bushels and call it a fair yield. Some reap much less and are satisfied. We sow two or three bushels of oats and thresh forty to a hundred, counting the latter a bumper crop, i.e., in Alberta. In Ontario sixty bushels would be a bumper. I have seen a bushel of potatoes grown from a single tuber, but many farmers think they have done well to garner a hundred bags from twelve or fourteen bags of seed. Where all the leaks and how many of them can we eliminate? How close can we reasonably expect to approach 100 per cent. standards?

Looking over my grain field and seed plots to-day, I kept thinking of my business friend's remark. Both crop and plots were looking fine—a veritable "feast for sore eyes"—yet I knew they would come far short of the possible. Wherein would the shortage consist? I began to examine: To begin with, there were some low, wet and cold-bottomed spots where the grain had started late and weak and made spindling growth. They would cut down the average perhaps 10 to 15 per cent. Then the dead furrows were marked by short, weak drills. There were not many furows but they would account for a deficiency of perhaps one or two per cent. Weeds, I am sorry to admit, crowded the plants in many places, and in the final reckoning would probably impair the result thirty per cent. These losses were quite obvious. Examining more closely one could see places where owing to insufficient covering of seed in a dry seeding season germination had been delayed until after the late rains. The belated plants would not ripen grain with the rest—possibly would not ripen any at all. From the standpoint of threshing returns these late-started plants would be as weeds in the field, robbing the other plants. Better that the seeds which produced them should have been kept in the bags. Other seeds have germinated but not with the same burst of vitality and rapid growth as the best seeds in the most mellow and fertile spots. Lack of perfect vitality and substance in the seed shows plainly in the less favored portions of the field. Here and there were places where the crop seemed almost perfect. Neck-high were the panicles of oats, the plants seemingly as thick as they could stand upon the ground, stalks larger than lead-pencils at the base, leaves broad and rich, dark green. There was no smut for the seed had been carefully blue-stoned. Here we should have increases pretty near the maximum, though even here a close inspection would reveal occasional short-gaps in the otherwise solid drills, telling of imperfect seed, imperfect placing by the drill, imperfect covering, insect injury, bird depredation or other cause. Verily the husbandman has many odds against him in field practice. No wonder he falls far short of 100 per cent. For there is still the chance of frost, hail, winds lodging or shelling the grain, wild and domestic fowl taking toll of the harvest, rain spoiling it in the shock, shelling in handling, imperfect separation in threshing, etc.

Spanish Gold

By GEO. A. BIRMINGHAM
Illustrated by DUDLEY WARD

The Story of a Search for Treasure on the Coast of Ireland and the Amusing Situations Which Arose.

SYNOPSIS OF PREVIOUS CHAPTERS

The Rev. J. J. Meldon, curate of Ballymoy, a village on the west coast of Ireland, while visiting his friend, Major Kent, comes across an old pocket-book of the Major's grandfather, in which he finds an account of some treasure, supposed to have been hidden by the Spaniards of one of the vessels of the Spanish Armada, on the Island of Inishgowlan. The Major possesses an excellent yacht, The Spindrift, and they decide to take a trip to the island and search for the treasure, which Meldon is very confident of finding, but of the existence of which the Major is very skeptical. Meldon also owns a yacht, The Aureole, a worthless tub, which he lets to a Mr. Langton, who, with a friend, wishes to take a trip round the coast. On arriving at the island Meldon and the Major find Higginbotham, an old college chum of Meldon's, engaged in surveying the island for the Government, and dividing it up into allotments. He informs them he is prevented from completing his work by the obstinacy of one old man, named Thomas O'Flaherty Pat, who owns a piece of land in the very center of the island, entirely surrounded by other people's land, but with which he will not part at any price. Meldon, not wishing to divulge the real reason of his visit, tells Higginbotham the Major is a Government mineralogical expert who has been sent to examine and report on the island's mineral resources. Meldon and the Major start to explore the island and discover they are being followed everywhere by an old man, who turns out to be Thomas O'Flaherty Pat, and who declares he cannot understand a word of English. Meldon tells him they are naturalists looking for sea beetles, and manages to get rid of him; continuing their search, they find an inlet with a hole, which is only visible at low tide, and here Meldon decides the hidden treasures must lie. On returning to the yacht they notice the arrival in the harbor of the Aureole. The following day Meldon starts for the inlet and the cave, and on his arrival discovers a man, who is being lowered over the cliff to the entrance of the cave. This turns out to be a Sir Giles Buckley, the friend who is with Langton, on the Aureole, and a son of a neighbor of the Major's, who had lately died. Sir Giles would also have heard of the treasure, as his grandfather was a friend of the Major's grandfather, and had visited the island with him. After some discussion, Sir Giles calls out to Langton to haul him up, and both he and Meldon depart, as the tide has nearly covered the hole in the rocks. The following day, Meldon, having set adrift Sir Giles' boat to prevent his leaving the yacht, again visits the cave with the Major. They make their way through a long underground passage and eventually find two old iron boxes which, however, are empty. At this point Langton and Sir Giles appear on the scene through a hole in the top of the cavern which it seems is just under Thomas O'Flaherty Pat's plot of land. Disappointed, they all return to the yachts, and find that the Government yacht has arrived in the harbor with Mr. Willoughby, the Chief Secretary, on board. Willoughby lands to visit Higginbotham, and Meldon follows. Higginbotham in vain tries to dissuade Meldon from seeing Willoughby, who is much incensed at Meldon's tale of the geological survey, but Meldon insists, and we here find him in the midst of a conversation with Willoughby, who is beginning to be amused at his good-humored nonsense. Afterwards Thomas O'Flaherty Pat approaches Meldon secretly and tells him that he has found the treasure and, being afraid of the neighbors and Sir Giles, he wants the clergyman to take charge of it for him. He takes Meldon that night to his house and shows him the treasure hidden under the stones of the hearth. They have been followed by Sir Giles and Langton, who attack them in the dark and, overpowering them, tie up both O'Flaherty and Meldon. The latter is left alone and manages to roll into the next field.

"TAKE him," he said, "and stand him up on the pier beside the other blackguard."

He stepped over the side himself.

"I expect the boat has a hole in her," he said to three of the men who still waited. "You had better get the anchor on shore and make it fast. If she goes adrift on us now, she'll sink."

He waded ashore, went to the pier and greeted Mr. Willoughby.

"Sorry I hustled you this morning," he said. "It seemed the only thing to do at the time."

"I don't mind being hustled in the least," said Mr. Willoughby. "Living the kind of quiet, monotonous life a Chief Secretary does live, I'm sure a hustle now and then is good for me."

"It's very kind of you to say so. Sure you don't mind coming ashore in your pyjamas?"

"Not a bit. I rather enjoy it for a change. But I'd greatly like to know what this is all about."

"I never," said Meldon, "saw pyjamas just that particular shade of pink before. Where do you get them?"

"They're Irish manufacture, if that's what you're driving at. I daren't wear anything else even at night. But you haven't told me yet——"

"Oh, that's a long story."

"I'm sure it must be. Perhaps you'd rather put off telling it till after breakfast?"

"Not at all," said Meldon. "It's not so long as that. Oh, here's Father Mulcrone. Didn't you get the Major?"

"He wouldn't come ashore," said Father Mulcrone. "He didn't seem to care about meeting the Chief Secretary."

"Oh, the geological survey, I suppose," said Meldon. "That's all over and done with; isn't it, Mr. Willoughby?"

"Quite," said Mr. Willoughby. "It lies buried in a remote past. Things move so rapidly on this island that the affairs of yesterday are prehistoric before we are dressed this morning. Besides, a geological survey is nothing compared to the—the pragmatist method by which you roused us from our berths. Why did you give us the idea that something was on fire?"

"Because I wanted you to prevent Sir Giles Buckley from sailing off in the Aureole."

"I gathered that from the way you spoke at the time. But please tell me why you wanted to stop him."

Meldon glanced at the dripping Sir Giles. He was most unwilling to tell the story of the gold which lay in the Aureole's cabin. He wondered whether Sir Giles could be counted on to back up a version of the morning's adventure in which no mention of the treasure appeared.

"You may not know that that boat"—he indicated the Aureole with his thumb—"is rotten. Everything in her is rotten except the anchor chain."

"Yes?" said Mr. Willoughby.

"Well," said Meldon, "that explains what you want to know, doesn't it?"

"Not quite. I'm stupid, I suppose; but as a matter of fact it doesn't explain anything to me."

"Don't you see that if Sir Giles had gone to sea in a rotten boat with the wind that's blowing to-day, he'd have been drowned to a certainty?"

"Oh," said Mr. Willoughby, "you wanted to save him from drowning?"

"Him and his friend."

"But, as well as I could make out, you flung him into the sea?"

"Quite so," said Meldon. "There wasn't anything else to do. Was there, Father Mulcrone?"

"There was not," said the priest. "The man was dancing on my knuckles and trying to kick my face."

"I suppose he must have very much wanted to be drowned," said Mr. Willoughby.

"Well, I wouldn't go as far as that," said Meldon. "But there's no use taking

up these speculative questions. Where's Higginbotham?"

"He must be asleep still," said Mr. Willoughby.

"Dear me," said Meldon; "that's a pity now. Higginbotham is just the man who might have helped to clear things up."

"I don't know if it interests any of you"—it was Sir Giles Buckley who spoke—"but you're listening to a pack of damned lies."

"I wish," said Meldon, "that you'd try and break yourself of that habit of swearing, Sir Giles. I think I've mentioned it to you before."

"Of course," said Mr. Willoughby, "it's no business of mine. Still, I should like very much to understand what all this fuss has been about. Perhaps, Father Mulcrone, you may be able to throw a little light on it."

"Not a bit," said the priest. "All I know is that the gentleman there who seems to be catching his death of cold——"

"So am I, for that matter," said Mr. Willoughby.

"I see," said the priest, "that the men have come up from your boat, Mr. Meldon. They seem rather angry about something. Old Thomas O'Flaherty is talking to them hot and strong and he's pointing this way. Perhaps we'd better go somewhere else before entering on an explanation."

"Right," said Meldon. "Higginbotham's tin house is handy. Let's go there. It would do Higginbotham good to be made to get out of bed."

"I should prefer the Granuaile myself," said Mr. Willoughby. "I'd like to get into a suit of clothes."

"Right," said Meldon. "It's all the same to me. In fact, of the two I rather prefer the Granuaile. I don't expect Higginbotham could rise to much in the way of breakfast for this party. We'd better take Sir Giles and Langton with us. Those fellows at the other end of the pier are looking rather nasty, and I happen to know that I'm not the man they want to kill."

"It can't be me," said Mr. Willoughby.

"It is not you," said Meldon. "Nor it's not Father Mulcrone. It's Sir Giles. That's the reason I said we ought to take him with us. But before we start I think you should make the men a speech, Mr. Willoughby. It might quiet them down."

"A speech! Good gracious! What about?"

"Oh, anything. The University question, or the intentions of the Government about the land, or Devolution. Yes, Devolution would be the proper thing. It would turn their minds away from Sir Giles and Langton. Try them with Devolution."

"Get into the boat," said Mr. Willoughby. "I can't stand on this pier and make a speech in my pyjamas."

"No? Perhaps not. Well, you have a go at them, Father Mulcrone. You won't? I suppose we'd better not turn on Sir Giles. He might make them more irritable. I'll have to do it myself, though I must say it's rather hard on me. I'm the one of the party who has worked hardest during the night. I can't tell you how trying it is to have to roll about in the dark with your hands and feet tied."

"Mr. Meldon, wake up! Wake up, at once!"

The Chief Secretary and Father Mulcrone remonstrated with him vigorously. He yielded to them so far as to forbear making a speech, but he insisted on having a word in private with Mary Kate.

Taking the child out of earshot, he said to her—

"Mary Kate, go you to your grandda and tell him this from me: If there's anything that belongs to him in that yacht let him get it out of her and away with it before we come on shore again. Do you understand me now?"

Mary Kate nodded, grinning. Meldon joined Mr. Willoughby and Father Mulcrone in the Granuaile's boat. Sir Giles and Langton eyed the men who were standing in a group at the far end of the pier and then followed Meldon.

"You're right to come with us," said Meldon. "Old Thomas O'Flaherty is looking uncommon wicked, and you can't altogether blame him. He's working the rest of them up. I don't think that Inishgowlan will be exactly a safe island for you to picnic on, Sir Giles; not for a few weeks anyhow."

"I'm becoming more and more curious," said Mr. Willoughby. "I want a key to the mysteries which surround me. I'm a little anxious, too. If ever we get back to civilization we may find ourselves in a police-court. Don't mix me up in anything criminal if you can help it, Mr. Meldon. Consider my position as Chief Secretary."

"You're pledged," said Father Mulcrone with a grin, "to the preservation of law and order in Ireland."

"It's all right," said Meldon. "I'll keep your name out of the business as far as I can. Father Mulcrone and I will take whatever blame there is."

"I won't take any blame," said the priest. "I know nothing about what's going on, either good or bad."

"You'll have to," said Meldon, "whether you like it or not. It's your parish, so of course you're responsible if anything goes wrong."

CHAPTER XXI.

"I COULD do with a wash," said Meldon when the party reached the Granuaile.

"You shall have it," said Mr. Willoughby. "You shall have my bath."

"Oh, don't bother about a bath. There's no use running into extremes. I'm a moderate man in every way, politically and otherwise."

"Better have the bath."

"All right, then, I will. But if I do, somebody'll have to go over to the Spindrift and get me another suit of clothes. Father Mulcrone, perhaps you wouldn't mind——"

"I'll send a boat," said Mr. Willoughby. "Father Mulcrone wants to dress like the rest of us."

"All right," said Meldon. "I don't care who goes. But I wouldn't like to get into these things again if once I took them off. By the way, have you any sticking-plaster?"

Continued on Page 53.

Her Chances of Happiness

How Much Is The Farmer's Wife To Be Envied By Other Women?

By ETHEL M. CHAPMAN

How much is the woman who lives on a farm to be envied by other women? A good deal, if the living conditions on the farm are normal, by which we mean what they should be with a reasonable income and right ideals. It is the exceptions to this which have created a wrong impression. In this article the writer has taken up some of the common handicaps and their remedies from a woman's standpoint. —Editor.

THE sun going down one day last winter left this allegory picture. It was just an everyday stretch of fields and woods and scattered farm houses, with a new moon rising over the winter whiteness. Bleak and isolated it would hace seemed but for the columns of faint blue smoke from a dozen scattered chimneys, and the lights beginning to twinkle from the kitchen windows. Shadows hurrying past these lights told that the busy house-mother was preparing for the home-coming of her flock, just as she had done every evening since the proverbial crane was hung over her hearth. From the wood lot and the mill the heavy teams were coming home. Even as they covered the last stretch to the familiar stables, their stately pace quickened scarcely enough to carry the sound of the sleigh bells up the hill, as though they too felt the dignity of having performed another day of house-work.

The clear, happy voices of children coasting down the hill above the pond floated far on the still air—the silence would have been awful without that—until the sexton lighting up the little church in the hollow must have reminded them that it was time to get into their glad frocks for the "Christmas tree."

The shadows deepened, and from the door of a little cottage at the cross roads, an old man and an old woman came out to see the moon rise. What a deal of pleasure the years had taught them to find in the wonders of simple things. How childishly happy they looked and what a depth of understanding glowed in their eyes as they silently turned and went in again. Then a cutter dashed around the corner, the horse shying at the shadows and the bells going like mad; a girl very sober, and a young man driving with one hand.

It was just a miniature of life,—labor and laughter and love all over again.

But it was the girl going around the corner that I was thinking about. Already I could almost see her starting a new life in the new house over the hill, and I wondered if she knew that these three were the only safe investments to put into it, the only things that make it worth while or achieve its natural human object, happiness. I also wondered how well she was equipped to make the most of them.

A PROFESSION WORTH TRAINING FOR.

Her profession — just home-keeping, would be about the broadest and most creative work going, but some of the neighbors were not finding it exactly a blessing. One lives in a big house, handsomely furnished and well-equipped for the best housekeeping. Her home and her children are always in order. Every detail of her work is carried out to the last letter of efficiency, but she hates it. She finds it monotonous with nothing to show for the regular daily routine. She is as sure of results as a capable machine, and about as happy and inspiring to her family.

The next neighbor does not know the first thing about the technique of housework. She just stepped into it without experience or preparation, the work came fast, and she soon found herself in beyond her depth and disheartened. She is naturally a good home-maker, but because she doesn't know how to do the practical everyday things upon which it depends, her homemaking ideals can never be realized.

What both these women want is education. The capable but pessimistic woman is discontented with her work because she doesn't know its importance. She doesn't realize that the endless making of bread, and planning of meals, the stewing and baking and garnishing, means the building of flesh and blood, a skilled craft in the hands of a dietitian, a chemist and an artist. It has never occurred to her that keeping a home clean, and making it comfortable and lovely has a vital part in building the health and character of the family. There are books by writers like Ellen Richards, Devine, Parola, Call Margaret Morley, Jane Austen and Margaret Sangster in every good Institute library and in the collections sent out by the Department of Agriculture, that would bring her the revelation she needs. More helpful still would be the study of these subjects with other women, as the Institutes and Homemakers' Clubs are taking them up all over the country.

"Standing with reluctant feet where the brook and river meet."

The second woman needs all this and more, which she should have learned in her girlhood. The chances are that her mother was the best housekeeper in the neighborhood, so capable and quick that it was easier to do the work herself than to teach her daughter. Even so, she might have sent her to a Home Economics school for a few months, but she didn't. She just "got her married" and left her to grope in the dark by herself.

And the third neighbor lived on one of the wealthiest farms in the country—that is, the wealth wasn't in the farm then. It was lying in the bank and mortgages, but the farm had produced it somehow. This woman carried her coal from the barn and water from a pump at the far corner of the back yard. She did the washing for the family and hired men, on a wash board, and fed them by selling butter whose manufacture involved no other hands than her own from the milk-pail to the ladle. She was a marvellous woman, who could put a bright face on things even under these conditions, but she would be worn out long before her squeaking old churn had given its last thump. Nothing would have been more absurd than a sermon on the dignity of labor preached for her benefit. The value of up-to-date machinery was pretty well understood on the farm, here, because it saved time and labor and there meant money. A washing machine, a butter-worker, a faucet in the kitchen would also have saved time and labor which meant *her*. In the early years, when they couldn't afford these, she had often forgotten the aching weariness in planning for them, but now it was the hopeless outlook of seeing nothing better ahead, as well as the drudgery itself that was killing her.

Yet withal, the woman to whom it is given to set a hen, or cook a dinner or patch a shirt, is invariably happier than her sisters who belong to the class that

live as "the lilies of the field." Almost the greatest blessing we have is congenial work,—work that we look forward to with eagerness from the moment we waken in the morning, and put away with a feeling of wholesome tiredness at night.

Getting in Wrong.

Right here is where the world is full of tragedies, the restless discontent of those who have not found their niche in life, and the popular slogan "Keep the young people on the farm, whether they have love or ability for the life or not" is responsible for more than half these misfits in the country. We should never have heard this cry if the environment and education of the young people had taught them to know what agriculture really is, to have ideals and to know how to go to work to realize them. Then only those whose natural bent lay distinctly in some other direction would have turned their faces toward the lights of the town. I wondered whether the girl had this education, along with a training in some special line by which she could have earned an independent living, for these are the girls who, even if they do try their wings for a while, are glad to return to their first love, the hills and creeks and meadows of the home acres. But none of them will marry the best available farm in the neighborhood to find it an elephant on their hands afterwards.

"THROUGH A GLASS, DARKLY."

While labor conditions can differ so widely in three homes on adjoining farms, the laughter of country life depends to an appreciable degree on the community. Every neighborhood has its social tone distinct and different from the one next to it. There is the settlement where farms are far apart and neighbors have nothing to draw them together. Perhaps an old Grange Hall stands across from the post office, a relic of days when there were better times, socially at least. I don't know how the men feel about this, but I know that when a Women's Institute is organized in this type of community, the first question the women ask themselves is not "What new things can we learn aobut housekeeping?" or "What is the latest freak of the women of Kalamazoo?" but "How can we manage to get together a little oftener, and make tea, and tell what John says about the war, and what luck we had with the turkeys this year?"

The girls' problem is not "How can we be independent?" Economic conditions are secondary to the natural young hunger for life and company. . The eager, vital question is "Can't we start something?" And if something is not started, the real joy of living will soon be dead. They will marry, and keep house, and have children and grow old, not because of the promptings of happiness, but because these are the matter-of-course, inevitable things to do. They may be conscientious and devoted, but their children will be less happy and their homes less inspiring because they see life "through a glass darkly." There are thousands of women with a morbid, worrisome, pessimistic conception of life, because they never knew its laughter. They were kept in the house learning to sew and knit when they should have been climbing trees, and riding horseback, and gambolling over the fields like all the other young animals. They were trying to fill the evenings with monotonous make-shifts, when they should have been having skating parties and dances and literary clubs. They were self-conscious, backward old women when they should have been going to college,—just exactly that. There may not have been many colleges for girls in their days, but there are colleges especially for farmers' daughters now, and every girl has a right to their social color as well as the education.

Then there is the community where social life is not lacking but of the wrong kind, where three or four nights a week, all through the winter, the young people gather for a frolic that lasts till three or four o'clock in the morning. From the standpoint of either health or ethics, this is not good. The entertainment that keeps people in a bad atmosphere all night, and sends them home with nothing to think about of more weight than "All join hands and circle to the left," is missing its purpose. The old-fashioned country dance is a good, exhilarating form of amusement, but it needs supervision and it is not sufficient in itself.

PRETTY SAFE. IF SHE'S STARTED RIGHT.

Yet if the girl is made of the right stuff, if she has firm ideas of right and a wholesome sense of fitness it won't matter what kind of neighborhood she moves into, so long as she has already learned the importance of social color. She will know how to be neighborly and she will know how to give a wholesome kind of entertainment in her own home at least. Then she can work some leaven in the Women's Institute and church societies to encourage and plan outdoor sports, to bring an occasional first class concert or lecture from the city, and better still to promote the clean, free, optimistic spirit that rightfully belongs to country life.

Just now, however, I don't think of any of these things concerned the girl at all. She wasn't measuring happiness in terms of labor or laughter, and I suppose she ought to know; it was her affair. Anyway if she had been taught to know and respect clean, big standards of manhood, other things being equal, her chances for happiness were better here than anywhere else. Unlike the wife of a man in almost any other calling, she would be a necessary part of her husband's business, which means a lot in keeping a family together. She would find in the fields and woods no sign, "To let . . . No encumbrance," but a glad welcome, food for strong minds and bodies and a hopeful future for her children. Altogether her chances for happiness were about the best in the world, if she knew how to find it through the three common channels, labor, laughter and love. That was the question.

A WOMAN'S VOICE

By THEODOSIA GARRISON

In the Delineator

O heart! what is it you hear above
the noise of a nation,
Above the sound of clamor and
shouting
And men making ready for war?
Only a single voice, little more than
a broken whisper,
Patient and unprotesting—only the
voice of a woman.
Yet I hear it above the sound of
guns
And the turmoil of men embarking.

I.

There's no use praying any more;
the prayers are done and said;
But daytime going through the
house, or nighttime in my bed,
They trouble me, the old prayers,
still ringing in my head.

The young men from the papers,
they brought the word to me.
I'm thinking of their mothers, how
glad they ought to be,
Who never said "Good-by" to them
and let them off to sea.

As strong as any man he was, and
bold to do and dare,
And why should I be hearing, then,
all night above the prayer,
A little lad that's calling me—and
wanting me—somewhere?

II.

He said what he thought was right;
"Let you be proud," he said,
"That you have got a son to fight;
"Tis a glory over your head!"
'Tis never a good man's words I'd
scorn,
And he said what he thought was
best;
But I knew my pride when the lad
was born,
And his head was warm on my
breast.

"Let you be proud," he said.
'Twas the word that stabbed me
through;
Proud—and my one son dead
In a land I never knew!
'Tis the women know when glory's
worn
(Though he meant the word for
the best);
I knew my pride when the lad was
born,
And his head was warm on my
breast.

Only a woman's voice—patient and
unprotesting,
But I hear it above the sound of
guns
And the turmoil of men embarking.

A typical apple growing district of British Columbia. The hills and rivers of this province will soon carry as much to her people as do the Grampians.

Apple Raising On Vancouver

By W. J. L. HAMILTON

Spitzenberg, Newton Pippin, Ortley and Jonathan As Permanent Trees, With Wealthy, Yellow Transparent And Duchess As Fillers, Properly Pruned And Sprayed Cannot Be Overplanted.

UNDER the heading of "What Do You Know?" the FARMER'S MAGAZINE for July asks some questions, the correct answering of which is a pretty fair test of the knowledge of an orchardist respecting his business. It is true that, in the West, the correct replies might not be adapted to eastern conditions as regards certain points; yet an understanding of the main principles, and answers based on these, must be of interest to all.

We must regard the commercial orchard purely and simply as a business proposition out of which it is intended to secure the best possible returns for the minimum outlay. To do this it is necessary, assuming the land to be suitable, to select those varieties which give the best results. This calls for several necessary attributes without which no variety should be selected.

Conditions on Vancouver Island and the small adjacent island and coast farms, are such as to take some of their apple-planting advice from the Hood River farms in Oregon rather than from Eastern Canada. Nevertheless these farms are a valuable part of Canada, and the rest of the country appreciates the class of apples they produce. The wide difference in Vancouver and Lake Ontario plantings is noted by the varieties cited. In the former the three varieties in the title of this article contrast sharply with the standard of Spies, Baldwins and Greenings of the latter. It is, therefore, of supreme importance that each article gives data for particular districts. The writer of this has been a resident farmer of South Salt Spring for over 22 years.

The tree should prove healthy and free from disease when subjected to the local conditions. It should be a good and regular bearer, and the fruit should be of the highest market value. The latter condition very greatly reduces the number of standard varieties from which to make our choice.

VARIETIES TO PLANT HERE.

Where the conditions are favorable for their growth the Yellow Newton Pippin, the Spitzenberg, the Ortley, and the Jonathan leave nothing to be desired. Running them closely the Gravenstein, the Spy and the King afford a second choice.

For fillers, the Wealthy, a healthy tree and bearing such heavy crops annually as to quite compensate for its lower price per box, Grimes' Golden, and, where the local market calls for an early apple, the Duchess, Yellow Transparent, and Napoleon, leave little to be desired.

With us, in the southern portion of Vancouver Island, and the adjacent is-

The interior of a packing house in Nova Scotia. The Maritime provinces also have a reputation for beautiful apples.

lands, we can secure prices which appear to depend more on the appearance of the apple than on its other good qualities, so that even such kinds as Wolff River, a large and prolific but coarse variety, bring prices in the local market which make it rank well in the list of commercial fruit. I fancy, however, that such apples as these will soon be discarded as of low quality.

The question of the number of varieties to be grown in a commercial orchard is one regarding which local conditions must be studied. The size of the orchard also, is a material factor, since too many kinds in a small orchard are a mistake. In no case should less than two kinds be grown and these should be alternated to secure cross pollination. In my opinion four of the best commercial varieties is about the best number in a reasonable-sized orchard. That is for permanent varieties. Two or more kinds of fillers may also be grown. Duchess apples sell well here they are so early, so, were I within easy delivering distance of Victoria I might give some of this variety a place as fillers, between King, Gravenstein, and perhaps Jonathan, as permanent trees.

BELIEVES IN ONE-YEAR-OLDS.

In this district I should always set one year old trees, and plant them in the fall before all the leaves had fallen. This secures a slight root growth and a good start in the spring so that the trees are not set back. The younger the tree the less it feels the removal. Also a young tree can be correctly trained. Moreover it has over and over again been proved that the one year old tree will rapidly overtake the two-year-old, so nothing is gained, whilst the difference in price is wasted.

According to experiences of the apple experts of Hood River, 15 inches is the right height at which to head off the one-year-old tree. Three or five shoots are then selected from those springing from the stem, all others being rubbed off. These are allowed to grow, cut back one-third before growth starts the following year, and from each branch two shoots, the end one and one a few inches further back along the branch are allowed free growth, the other shoots being summer pruned to the fourth leaf to secure fruit bearing spurs. This gives a frame of six or ten main branches to form the skeleton of the tree. The leading shoots, forming these main branches are cut back one-third each winter, the terminal bud of each shoot being alone allowed free growth all others being summer pruned for fruit bearing. The tree whilst young is trained into a cup shape and held in position by tarred yarn, until the branches are strong enough to stand the process of permanent bracing.

This is done eight feet to ten feet from the ground by screwing a galvanized screw eye into the inner side of each of the six or ten limbs. A wire from each eye is led to a ring in the center of the tree and there secured. These wires then radiate from the center ring like spokes from the hub of a wheel and make the tree so strong that no crop can break it down, nor can wind shake it.

IT AIDS PICKERS.

As there is no central stem it is easy to run a board at any time through the center of the tree, if it is supported each end by a stepladder, so the pruner, the fruit thinner and the apple picker have rapid and easy access, saving much time, which is money, saving breaking the tree, and insuring that each apple is hand picked. Thus cost of production is reduced.

I do not know that we can easily, in this western country, overdo the planting of orchards, the market is so extensive, so long as the orchards are properly sprayed. Otherwise they become the breeding places for pests.

The only commercial objection I can at present see to extensive planting is the difficulty of securing good pickers. Bad ones are an abomination.

COVER CROPS FOR THE ORCHARD.

I should put in a leguminous cover crop every fall, and commence cultivating by ploughing this under (with a disc) in the spring, just after the first spraying and before growth starts.

Cover crops protect the trees in winter and prevent leaching on side hills, and legumes such as clover, peas, etc., supply nitrogen, the most costly fertilizing element. 200 to 400 lbs. of potash and superphosphate make a good fertilizer and should be supplied from time to time and disced in when there is ample soil moisture. Fertilizer in a dry soil is useless, at any rate until rain falls. Fortunately the above fertilizer is not lost by heavy rains as nitrogen in the form of nitrate would be.

It must be remembered that any application of fertilizer produces its beneficial results, not the year it is applied, but the year after. I prefer to apply it when the cover crop is disked under in the spring. I say disked advisedly, for none but a disc plough should be used in an orchard, since it cuts surface roots that a share would bruise and rip, admitting disease and preventing healing. Barnyard manure, whilst preferable to fertilizer alone, is prone to produce too much growth owing to its heavy nitrogen constituent, so a combination of manure and fertilizer is preferable. Barnyard manure supplies useful bacteria which fertilizer does not

DOES EXPERIENCE PROVE THIS.

Red fruited scions set in a green fruited stock will hardly give as highly colored fruit fruit as if the stock were of a red-fruited variety if the scions are top-grafted. If not grafted I do not think it matters. I believe the graft hybrid is affected in proportion to the relative percentage of the two varieties in the tree. By this I mean that the more of the stock stem there is in the body of the tree, the greater will be its influence on the fruit, not only in color but in season of ripening.

As regards woolly aphis, I find the winter lime-sulphur spray, if mixed with 10 pounds of lime to the barrel seals up and renders unpleasant all the bark crevices and crannies in which this pest takes refuge, reducing its numbers through strong tobacco extract ("black leaf," etc.) is the correct and ideal spray for this and all other insect pests that live by suction. This should be applied

when the aphis are seen. As they travel with us about August, or later, this is a good time to watch for them and spray if they are found. But these insects also attack the roots, where they do most damage. Tobacco stems and refuse worked in around the roots generally relieves this trouble.

SPRAY MIXTURES.

As a fungicide I prefer lime-sulphur-arsenate of lead spray of summer strength to Bordeaux. It is as efficient, kills insects also, and does not russet the fruit. Climate, however, has something to do with the relative efficiency of the two sprays.

Arsenate of lead as a paste is easier to use than in the dry form. Ortho-arsenate is the safest form to use, as there appears to be less burning. I always add quicklime to the lime-sulphur-arsenate spray as a safeguard.

For the home manufacture of lime sulphur spray only the purest freshly burned lime and a good grade of sulphur should be used, and the spray, reduced to the proper specific gravity should be used at once and as hot as possible. An excess of lime, if it is fine enough to prevent clogging the nozzle, is a great advantage, especially when scale is prevalent, whilst where lead arsenate is employed it is necessary as a protection to the foliage.

The introduction of the lime-sulphur-arsenate spray has simplified orchard practice exceedingly as it is the nearest approach to an all round spray yet found, it being only ineffective for insects which, like aphids, do not eat their food but live by suction. These insects being soft bodied are only controlled by such sprays as come in direct contact with them and which by their nature either clog their breathing tubes or corrode their bodies.

Black leaf 40, and whale oil soap with quassia chips are both good, and should be applied first, when the aphis appears in the spring and again when the third generation—the winged one—appears. They have natural enemies, chief amongst which are the larvae of the lady birds and those of the syrphus fly. As to the relative cost of home-made lime-sulphur as compared with the factory-made, the latter is usually dearer but keeps better. Relative prices depend on the local cost of labor and the cost of delivery from the factory. Both are good, but I find the home-made more potent if applied whilst still hot.

With us annual pruning during the dormant season, so long as there is no frost is universally followed. I usually select the time just before the spring spraying when there is time to spare. All prunings should be burned forthwith, whereby many pests are destroyed.

In our climate we are not troubled with mice nor yet with army worm, nor, owing to annual pruning do we grow our trees too high for economic picking and spraying, so we need not practice "dehorning." It would surely be preferable to having too high a tree.

The Colonial Farm House

A Style of Architecture Especially Adapted to Farm Homes.

By GENEVIEVE

This is a type of architecture which might be employed more frequently in building farm homes in Canada. The simplicity and friendly aspect of the colonial design gives a lasting charm, while the durable construction and roominess are most desirable in a country house. Further, a colonial house can be made attractive at comparatively little expense. For remodelling old farm houses, colonial effects can be worked out where it would be almost impossible to get an attractive exterior otherwise. We are always glad to offer suggestions to farmers intending to make over an old house, if they will send us a sketch of the old plan with some idea of the improvements they want.—Editor.

THE colonial style of architecture has the characteristics essential for a farm house. It is simple, home-like, unpretentious and dignified, with the additional advantage that it can be carried out in charming effects with little expense for decorative feature, in fact the lack of decorative *effort* is the secret of the beauty of a colonial house.

In the type shown here, the deep set porch is a rather unusual feature that gives a note of shelter and snugness. The front door opens directly into the out-of-doors, a relic of the hospitality of colonial times. The arch over the doorway, and the lattice-work between the porch columns also preserve the old-fashioned individuality which means so much to the builder who takes a real pride in his home. In this illustration, the materials used are frame, painted white, and red brick, but an entire white frame house with brick chimneys, of course (and the outside chimneys have a great deal to do with the appearance), would be very attractive. In any case we want the porch and doors, and the upper part of the house painted white.

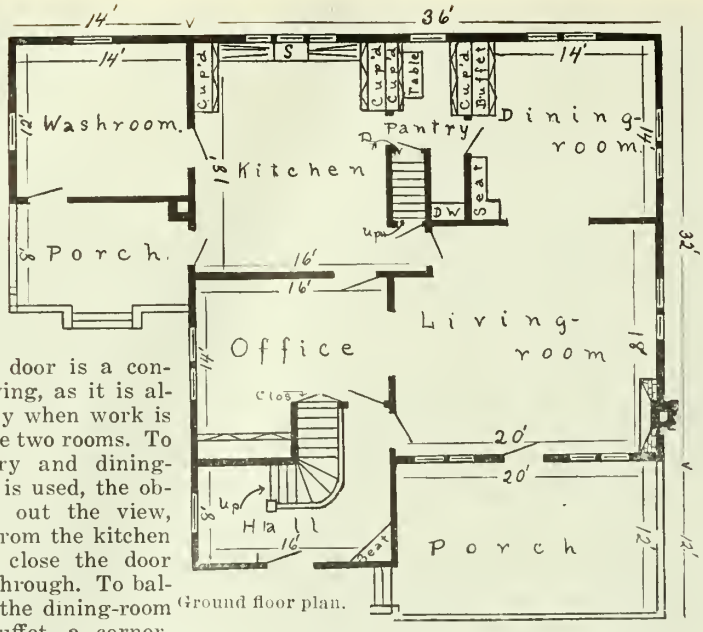
The interior lay-out is compact and convenient with sliding doors to give the rooms on the first floor even a closer connection. The front door opens into a square hall with a winding stairway, and doors opening into the living-room and the office, which means that a visitor entering the front door can be taken direct to any part of the house except the kitchen or dining-room, without passing through another room. Having the office right across the end of the hall not only saves space, but makes a better living arrangement by bringing the living room and office together. For the farmer's convenience we always try to have the office open by one door from the kitchen. It is a well-lighted room with a bookcase built along the narrow wall, and a closet or filing cabinet under the stairs.

The arched doorway, the deep-sheltered porch, and the lattice-work between the columns give a fine old-fashioned and hospitable effect.

The living-room is large and bright, with three groups of windows, a fireplace, sliding doors connecting it with the office and dining-room, and a front door opening onto the deep, sheltered porch. Summer or winter; morning, noon or night, this room will be a cheerful rendezvous for the family.

The kitchen is also a good size, but owing to the position of the chimney there will be no unnecessary traveling between the stove, sink, cupboard and work table. The arrangement of the sink and cupboards is also convenient, with ample room for work, and excellent light. A panel of glass in the outside door at the opposite corner of the kitchen makes it a very bright room. In looking at the plan it

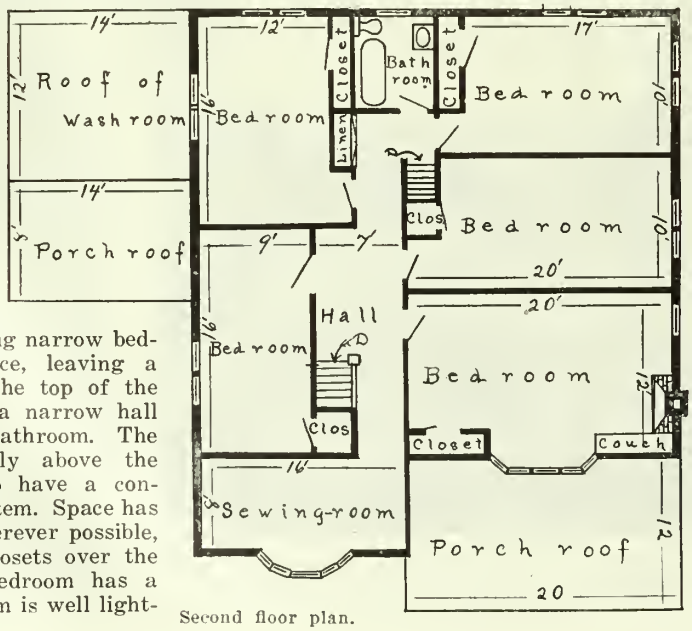
will be noticed that there is no wall between the cupboards in the kitchen and pantry cupboard and the built-in buffet in the dining-room. In the kitchen wall along the stairway is a sliding door which comes up to meet an upright at the end of the cupboards. The sliding door is a convenience worth having, as it is always out of the way when work is going on between the two rooms. To separate the pantry and dining-room a swing door is used, the object being to shut out the view, sounds and steam from the kitchen without having to close the door every time you go through. To balance the corner of the dining-room across from the buffet, a corner-seat is built in. A china cabinet or corner cupboard would answer the purpose equally well. The narrow end of the pantry is occupied by the dumb-waiter, the cellar door is convenient to the kitchen and the back stair going up above the cellar-way gives a little jog to the wall, which seems to screen the kitchen from the living-room, without really leaving any space between them.



Ground floor plan.

A part of the plan which no farm house can afford to be without, is the wash-room. This is built on, without a basement or upper storey. It should be well filled with a non-conductor, or tight air space under the floor, however so that it can be made comfortable in the winter time. Being built to meet the chimney, a stove could be put up here to use on wash days, and for a dozen purposes like boiling chicken feed in the winter time, trying out fat, and generally relieving the kitchen of unnecessary steam and disagreeable odors. The room would also provide a place for old coats, rubber boots and other foreign objects that are likely to find their way into the kitchen, and during the summer it would make a good washroom for the man. The soft water pump should be here.

The partition walls upstairs follow pretty closely along the line of those on the first floor. The space above the front hall is used for a sewing room. There is a long narrow bedroom over the office, leaving a square landing at the top of the stairs, from which a narrow hall runs back to the bathroom. The bathroom is directly above the kitchen in order to have a condensed plumbing system. Space has been economized wherever possible, in putting clothes-closets over the stairs, but every bedroom has a closet and every room is well lighted and airy.



Second floor plan.

The front bedroom is particularly adapted for a sick-room. Of course a house is built with healthfulness as one of the main objects so far as sunlight, warmth and dry, clean air are concerned, still there are times when some room has to be turned into a hospital, and the cheerful exposure, the size, and the fireplace make this an ideal room for the purpose.

For the layout of the cellar almost any one of our series of house plans would give a model that could be carried out in building this house. For a uniform distribution of heat the furnace should be placed well to the centre of the floor. The food room should be partitioned off for protection from coal dust and ashes; the milk-room should be separate for the same reason, and that no odors of other food can reach the cream; and the vegetables and fruit must be kept away from the furnace as we want to keep them at a temperature as low as possible without freezing. These essentials for utility and comfort, added to the architectural attractiveness make this a home worth the builder's serious consideration.

A Living on the Soil

How Many a City Man Now Facing a Dwindling Bank Account May Save the Day

By HARRIS K. ADAMS

Perhaps there is no better time than this to show the urban dwellers just how nice a thing it is to be even a farmer in a small way. All the world depends on the makings and savings of agriculture. The strength of Canada's manufacturers lies in the wealth of the farmer. Let the farmer cease work in even far away countries and immediately big factories close their doors.

But this is not all of it. The farmer's life is one of independence and content. His business has a wide field for exploration and resourceful initiative. His business has opportunity for scientific research and for experimental exploration second to none, and withal he enjoys the freedom of nature where all things appear to him in the real light of things as they really are. The man who advises his boys to study agriculture and to revel in the story of the life out-of-doors, does not give bad advice.

W. H. Patterson of York County, Ontario, has shown this year how every unemployed city man could make things joyful and prosperous for his family. Mr. Patterson, although living on the farm, tried intensive cultivation on a small lot and hired all the work done on an acre of land where only one crop was raised. He rented an acre of land and planted it to potatoes using all the best he knew in the way of the culture. The field had no barnyard manure for 20 years and the ordinary farmer would call it a very poor piece of land for a potato prospect. Nevertheless, by the aid of fertilizers and cultivation, Mr. Patterson, secured 100 bushels of a yield, which is not a large one as every potato man knows. However, his expenses were as follows:—

COST OF ONE ACRE.

Rent	$6.00
Plowing	3.00
Cultivating	2.00
Seed	12.00
Planting	3.00
Scuffling	2.00
Spraying	3.00
Digging	8.00
Marketing	8.00
Fertilizer	7.00
Total	$54.00

He sold the potatoes part at $1.00 per bushel and part at $1.50 per bushel and his returns amounted to $120.00. The gain on the transaction, therefore, amounted to $66.00.

Where the work was done by the owner it can easily be seen that there would return to the workman's pocket nearly all the outlay expenses of $54.

What one man can do as a side-line at the same time hiring all his work done, can be much more easily done by the enthusiastic man who can go at it himself. There are many incomes awaiting city men on the soil.

Marples---Ingenious Prairie Farmer

Continued from Page 14.

"I have every machine on this place that can be of any use, sometimes long before it becomes general in Canada," said the little enthusiastic English farmer, and indeed the comforts in the house do not end with the installation of machinery. A piano with a well-known name of quality, a victrola, besides the several interior decoration schemes make this farmer's home the equal of the city man's residence.

THE VALUE OF MACHINERY.

Out in the several farm buildings the same thoroughness in detail is noted. Three litter carriers carry the manure from the horse, cattle and hog stables to the barn-yard. Manure is taken care of on this Western farm and applied to the land with manure spreaders. I find this practice is growing all over the prairie province and that the soil responds wonderfully to the application.

The interior arrangement of the cattle barn, makes use of staunchions, cement and steel in a most up-to-date manner.

To further illustrate the degree to which the labor-saving is managed, the threshing outfit must be noted. A big tractor drives a thresher with a 28-inch cylinder. When the grain is hauled to this machine, two specially constructed dump racks of Mr. Marples' own design are used. These dump the sheaves of grain onto canvases which are arranged beside and under the special feeding device to the machine. By this means all the men that are required are five in number and they make good headway and waste practically nothing.

Mr. Marples grinds his own grain for feeding purposes. The grain is carried from the granary to the shipping machines by elevators electrically driven.

Potatoes form a paying crop on this farm and all the modern potato-planting and digging machinery is installed.

Care of this machinery is another feature of Mr. Marples' genius. Every precaution is taken to protect machinery from the weather. A survey of the average prairie farm reveals gross carelessness in this regard. Thousands of dollars' worth of agricultural implements are rusting out their usefulness in the open. Expensive gas tractors, plows, threshers, seed drills and wagons are yearly destroyed by this process. As is here wisely demonstrated, a straw-covered shed or a protecting roof can save dollars of upkeep in farm machinery. Carelessness in this matter is contagious. It is equally surprising how the law of initiative works to the bettering of buildings and to the caring for implements on the part of one thrifty settler.

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Casserole Cookery

For Economy and Attractiveness the Method is Unequalled

By JEAN McKENZIE

THE advantages of casserole cookery are many and it is no wonder that this method of cooking is coming into greater prominence every day, as these advantages are being realized more clearly. All sorts of dishes can be adapted for use in the casserole, and perhaps the chief point in its favor is, that by its means cheap cuts of meat and tough poultry, may be transformed into dishes as attractive and appetizing as the most high-priced and tender joints. There is very little waste in connection with casserole cookery, as the food is cooked in its own steam, and shrinkage is very small, while the natural flavor is much enhanced by this same retention of steam.

An outfit of casserole dishes that will be found to answer all ordinary purposes, is,—one large earthenware pot, with an enamelled interior and a close lid, large enough to contain the "piece de resistance" of the family dinner, and a round or oval casserole, which will cook a neck of lamb, or a chicken, comfortably. So much for the large utensils. Now a set of handled ramekins, just large enough to hold a serving of meat dishes for one person, or individual chicken, or kidney pies, while a set of smaller ramekins, just the size to hold a baked egg, a single portion of creamed potato, or macaroni and cheese, are invaluable.

TENDER CUTS NOT NECESSARY.

After investing in a set of casserole dishes it is well to study the cut of meat that may be used to advantage in them. Tender joints or young poultry are not essential at all, since just as good results may be obtained in the casserole from a tough cut as from a tender one. Such cuts as the flank, brisket, shoulder clod, rump, and lower round, in beef, are excellent when cooked by this method, while tough poultry, duck, kidney, ox and calves' hearts, and tongue, are also well adapted for this way of cooking.

In preparing any meat for casseroling, the first step is to cut it into pieces convenient for serving. Roll the pieces in flour, season with salt and pepper, and brown well in a hot frying-pan with a little fat rendered from salt pork. Put in the vegetables used, and make a gravy with a cupful or two of hot water, and the brown juice in the pan. Soup stock may be substituted for the hot water, if at hand. Pour the gravy over the meat in the casserole, cover tightly, set the dish in a hot oven, then lower the heat, and let cook very slowly from two and a half to three hours. Potatoes may be cooked with the meat, by adding as many as you need, sliced and parboiled, fifteen minutes before taking the dish from the oven. The vegetables used as seasonings may vary according to your individual

taste. Sliced carrots, turnips, and onions, celery, parsley and mushrooms, may all be used to give variety in flavor, while a cupful of canned tomato, strained over slices of steak before putting into the oven, makes a very delicious addition to the gravy.

USING UP LEFT-OVERS.

As a means of using up left-overs, which, like the poor, are always with us, the little ramekins are invaluable. A pudding that has appeared on the table once, cannot be served in its original form again, but by moistening and reheating in the ramekins, with a spoonful of tasty hard sauce, or a very rich creamy one, it will be relished as an entirely new dessert . Or try taking remnants of creamed meat dishes, as chicken or fish, put into the individual dishes as they come from the table, set into a refrigerator until wanted, then sprinkle with buttered crumbs and bake in a pan of hot water in the oven, and the problem of using up such left-overs is solved. Macaroni and cheese moistened afresh with rich white sauce, and served piping hot in the little ramekins forms a delicious relish at a dinner, and just try eggs baked individually with a spoonful of cream or dob of butter, for the children's lunch when they come home hungry from school. A novel way of serving even the plainest food goes so far towards making it attractive.

ROUND STEAK IN CASSEROLE.

Take two or three pounds of steak from the lower round, wipe, salt and pepper it, then roll in flour until thickly coated. Cook in hot fat in a frying pan, until all the surfaces are seared, and the meat is well browned. Heat the casserole, put in the meat, add chopped vegetables until the dish is nearly full, carrot, turnip, celery, and one small onion all cut into dice, and a few sprigs of parsley. Add two cups of canned tomato, pour a cup of hot water into the frying pan, and empty the liquor thus formed over the meat. Cover closely and set in a hot oven. Reduce the heat as soon as the meat begins to cook, and bake slowly for three hours. Serve the steak and vegetables on a platter, and the gravy in a boat.

CASSEROLED CALVES' HEARTS.

Fry two medium-sized onions with two or three slices of fat salt pork. Roll six calves' hearts in flour, until thickly coated, then brown well in the hot spider. Put into a hot casserole, add one cup stock or hot water, and one teaspoon of mixed, whole spices. Cover casserole closely, and bake two hours in a slow oven.

KIDNEYS IN CASSEROLE.

Put three tablespoons of butter into a casserole, and set on the stove to heat. When hot, cut into it one small onion, one carrot, one small turnip, one stalk of celery, all diced, and a bunch of sweet herbs. Cut four kidneys into convenient-sized pieces, and let all cook on top of the stove for five minutes. Then add one cup water, two tablespoons lemon juice, two

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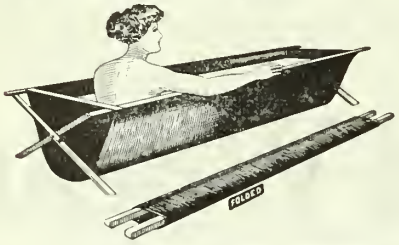

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tablespoons Worcestershire sauce, a few button mushrooms if liked, and season with salt, pepper, paprika, and a grating of nutmeg. Cover and bake two hours. Serve very hot.

CASSEROLED BEEF TONGUE.

Take a tongue that has been slightly corned, and boil it, then trim off the skin. Roll in flour, to which you have added a pinch each of ginger and allspice. Fry a few slices of onion in salt pork fat, then tie the tongue into shape, and put it in the pan with the onion. Fry until a delicate brown on all sides. Make a cupful of gravy, adding the juice of one lemon and one-half cup of seeded raisins. Put the tongue into a casserole, pour the gravy over it, and bake one hour in a slow oven. Untie the tongue, turn onto a platter, and pour the gravy over it.

SCALLOPED CHICKEN IN CASSEROLE.

Take a stewed chicken and remove meat from the bones. Put a layer of the chicken into the bottom of a casserole, sprinkle with salt, pepper, bits of butter, and some finely-chopped ham. Sprinkle a thin layer of cracker crumbs over this, then put in another layer of chicken, and repeat until the dish is nearly full. Pour over it one cupful of milk and one of soup-stock. Put on the cover, set in a pan of hot water, and bake in a moderate oven for half an hour. At the end of that time, remove the cover, sprinkle the top with buttered crumbs, and let brown before serving.

Farm Girl and Her Problems

Realizing that no one knows the farm girl's problems so well as the girl herself, we are submitting the following questions to give every girl an opportunity to help other girls. All correspondence will be confidential and published under a pseudonym. We would appreciate a reply to all or any of the questions from every girl reader.—Genevieve.

1. What are the reasons, in your opinion, for the attractiveness of farm life?

2. Do you know of any reasons why some girls don't like it?

3. In your home what share have you in the housework?

What conveniences have you (running water, labor-saving devices, and the like)?

What would you suggest as an addition to the equipment in order to make housekeeping easier?

Do you take part in any meetings or movements to promote better housekeeping?

4. What forms of recreation, what outings, and what amusements do you have?

Are there many young people in your neighborhood? How often do you have some kind of social gathering? What form of entertainment do these take?

Are there enough young people to form a literary society or study club?

5. Please give the names of some books you have read and say which you enjoyed most.

What libraries have you the privilege of using?

In your home in the evenings, do you read aloud and what book have you read in this way together recently?

What musical instrument have you in your home? What songs or what kind of songs do you sing most often?

7. What other cultural interests have you?

8. What ways have you of earning money?

Is any special sum set apart for your own use?

Have you any pecuniary share in the farm produce or do you own any live-stock?

Does your sharing in this ownership make you have more enthusiasm for the success of the farm?

9. How much study do you give to the problems of farming as a business?

How much to the art of home-making as a special profession for women?

Have you had any special training in home economics or domestic science?

Do you know anything about the laws governing women's property; how to do your own banking, etc.?

10. What form of nature especially interests you—trees, birds, ferns, mushrooms, wild flowers, garden or house plants, etc.?

11. What help do you give toward social organization of any kind—the church, the school, the Y.W.C.A., the Women's Institute or any society or club for social enjoyment or education?

WAITING

John Burroughs

Serene, I sold my hands and wait,
  Nor care for wind, or tide, or sea;
I rave no more 'gainst time or fate,
  For lo, my own shall come to me.

I stay my haste, I make delays,
  For what avails this eager place?
I stand amid the eternal ways,
  And what is mine shall know my face.

Asleep, awake, by night or day,
  The friends I seek are seeking me;
No wind can drive my bark astray,
  Nor change the tide of destiny.

What matter if I stand alone?
  I wait with joy the coming years;
My heart shall reap where it has sown,
  And garner up its fruit of tears

The waters know their own and draw
  The brook that springs in yonder height;
So flows the good with equal law
  Unto the soul of pure delight.

The stars come nightly to the sky;
  The tidal wave unto the sea;
Nor time, nor space, nor deep, nor high,
  Can keep my own away from me.

TRAIN LOADS OF CELERY.

In what is now known as the Sanford Celery Delta in Florida a thousand acres were sold in 1899 for twenty-five cents an acre. Under cultivation with sub-irrigation, some of these lands have since sold for $1,500 an acre. The estimated output of vegetables this season in the Delta will exceed 2,000 car-loads.

Don't Let *This* One Bounce Off

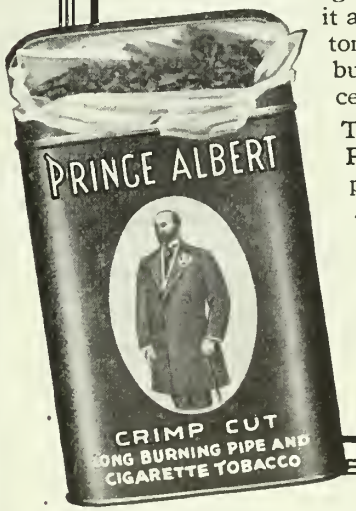
Counting seven white horses with your fingers crossed is never going to lose that smoke jinx that's been making you wince in the windpipe. But if you slip around to the nearest shop and say, "P. A.," careless like, the man will hand you some pipe food that is bona-fide smokings.

PRINCE ALBERT

the inter-national joy smoke

puts the real peaceful stuff into the fragrantest, softest, fluffiest smoke that any man ever puffed from a jimmy pipe, and that's straight, without a glint of moonshine.

No use soft pedalling this P. A. music. For pipe lovers or rollers of home-made cigarettes nothing ever equalled P. A. *You* can smoke it all day and into the wee little hours, and never a tongue bite or a "gol-ding-it" in the throat. That rough business is taken out by a wonderful patented process that makes P. A. as biteless as a newborn babe.



The tidy red tin is the prize knock-about package of P. A. Prince Albert is the largest selling brand of pipe smoking tobacco in the United States. Prince Albert is manufactured only by the R. J. Reynolds Tobacco Company, at its factories in Winston-Salem, N. C., U. S. A., and is imported from the United States by Canada dealers.

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Building Rural Social Life

A Farmer's Daughter Tells What a Library, a Play and a Tennis Court Did for One Neighborhood

By JESSIE L. BEATTIE

BEING a girl and living in the country, are two delightful things, that is if you are one of nature's daughters and your country is the real country. In Canada our country is surely real enough, and most beautiful, but in some communities the social conditions are very poor indeed. How to improve them is the problem—to improve them most wisely and at the least expense.

Lack of a good library is the thing most keenly felt by the young people, the majority of whom are anxious to press on, even though their education may have been limited to a public school. This should not be, but if it is the case, a library is the more essential.

But to select a really good class of books one must have money. How to raise this without asking assistance from the parents is often a difficulty. In our community an entertainment was given in the large school room—permission to use it as our theater being granted by the school trustees. This was a marked success and the returns amounted to over thirty dollars. The young people selected a number of standard books, purchased a library and stationed it in a snug corner of the school room. The presiding teacher acted as librarian. Encouraged by their success, from time to time they gave other entertainments and added each time more good books to their collection.

An entertainment to be worthy of course means a great deal of work, but with such a point in view, surely hard tasks must seem lightened and work be done with a will. A good dialogue book should be purchased and perhaps two selections made from this. Good judgment should be used in the choosing—in the community I refered to above two clever young people selected the play "Lady Teazle and Sir Peter." Many who witnessed the acting declared they would gladly have paid the fee of admission to see it alone repeated.

A good number also was a tableaux—"Canada and her Daughters." Girls had been chosen to represent each province and a very tall one to represent the Dominion. The lights were turned low and the curtain rose showing a crescent formed by Canada standing in the center and her daughters ranged on either side of her according to their height. Each girl wore a trailing gown of bunting and across it from left shoulder to right side of waist line were tacked the silver letters forming the name of the province she represented. Each one wore a band of silver upon her head except Canada, who wore a silver crown and held a sceptre wound with silver paper. Just before the curtain fell they sang, "The Maple Leaf," and for an encore, "God Save the King."

There are invariably young people to add vocal and instrumental solos, duets, etc., to the program; soon you find a long list on the paper, and before you know it, the entertainment has been successful and in your hand lies a sum of money to purchase the library.

A tennis club is a splendid thing to organize in the country. If the school play ground is comparatively level, a roller and a lawn mower will soon transform a section into a quite nice tennis court. In our little country village the tennis schedule is tacked up each week in the post office. Each person pays fifty-five cents to the secretary when joining and this is used in the replacing of balls, etc.

Magazines, too, are such a help and pleasure. If the subscriptions be too heavy for one to pay—make it a club affair. A literary club would be splendid in the long winter evenings, the members taking their turns in preparing papers which could consist of current topics of public interest, the biography of some well known writer, or a book talk on some standard novel. This club meeting could be held each week at the home of a member, selections of good books, poetry and prose be read aloud and discussed and if desired music also could become a feature of the club. And don't shut out the other members of the family from listening to your little program. It cannot fail to make them happier to hear the works of their children, and you may too, unknowingly rub away a little rustiness which has accumulated from too much strenuous labor and too little recreation and social life.

WILD GARLIC.

A bulletin has been issued recently by the Experiment Station at Lafayette, Indiana, giving full particulars about that great soil pest in certain parts of the United States—wild garlic. It seems that this plant is very troublesome to farmers as far north as southern Indiana and it is regarded as one of the worst pests in grain crops.

As it cannot be smothered out or cultivated out some other method had to be resorted to. The authorities at this college have hit upon the application of orchard heating oil as a fine spray. To do the most thorough work, it takes at least 75 gallons of oil to the acre. Prevention is better than cure in any case. However Canada is not infested as far as is known and everyone should be on the alert to keep bad weeds out of the country.

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Our Pattern Page

Patterns will be sent Post Free on Receipt of Price. Address Pattern Department, Farmer's Magazine, 143-153 University Ave., Toronto

NO. 6788—LADY'S HOUSE DRESS.

Novel and practical this dress has a reversible closing because the fronts are double and either side may overlap the other. The neck is finished with a small collar and the bishop sleeves may be made long or short. The skirt has four gores and is plain around the body.

The pattern, No. 6788, is cut in sizes 34 to 46 inches bust measure. Medium size requires 4⅜ yards of 36-inch material.

Price of pattern 15 cents.

NO. 6791—CHILD'S DRESS.

Quite a smart little frock is this, with, its very long blouse ending in what seems to be a tuck, but which is really a hem to which the two-piece skirt is joined. Body

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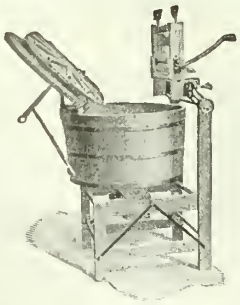
Ball-Bearing
WASHER



on Wash Day. Save two to three hours of hard work. Do the work much better than could ever be attempted in the old way and save the hard wear and tear on the clothes. This is real economy of your time and money and you should make this saving right now.

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J. W. WESTERVELT, Principal

and sleeve sections are cut in one and the closing is at the side of the front.

The pattern, No. 6791, is cut in sizes 2, 4 and 6 years. Medium size requires with long sleeves 1⅞ yards of 36 or 44-inch material.

Price of pattern 10 *cents.*

NO. 6868—LADY'S DRESSING SACQUE AND CAP.

The cap is round and not very full, with a separate ruffle in Charlotte Corday style. The sacque has a surplice closing, an open neck trimmed with a smaller collar and sleeves cut out in one with the body sections. They are small and plain, gathered into a band at the wrist or cut off at the elbow and trimmed with a turn-back cuff. The peplum is shaped and is much longer in the back than in the front.

The pattern, No. 6868, is cut in sizes 34 to 44 inches bust measure. Medium

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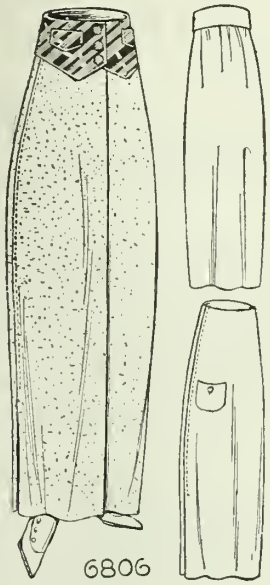
COARSE GRAIN

size requires three yards of 36-inch figured goods and three-quarters yard of 36-inch plain material.

Price of pattern 15 *cents.*



NO. 6806—LADY'S SKIRT.

In this natty skirt we have one of the new tailored models for part of a plain suit or for separate wear. There are either two or three gores, according to the width of the material employed in making. The closing is in front.

The pattern, No. 6806, is cut in sizes 22 to 32-inches waist measure. Medium-size requires for three-gore skirt, 2¼ yards of 44-inch material.

Price of pattern 15 *cents.*

NO. 6805—LADY'S WAIST.

This design gives us a charming and simple blouse, made with body and sleeves in one and with some fullness under the arm. The neck is open and is trimmed with a flare collar rolled back at the sides

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16-oz. Johnston's Fluid Beef (Vimbos), $1.20.

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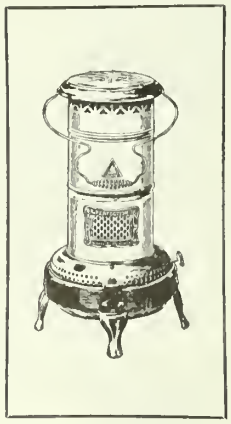

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114

and the sleeves are of three-quarter length with fancy arrangement at the straight edge. The closing is in front and there is a shaped peplum to wear inside the skirt.

The pattern, No. 6805, is cut in sizes 34 to 44 inches bust measure. Medium size requires 1⅝ yards of 36-inch material with one-quarter yard of 27-inch contrasting goods to trim.

Price of pattern 15 *cents.*

NO.6865—LADY'S APRON.

This is one of the favorite bungalow aprons, made with a small waist with sleeves and body cut in one, closing in the back and joined to a skirt which completely covers that of the dress. All free edges are bound with wash braid of harmonizing color. Gingham, calico, cambric, and cotton crepe are used for these aprons and a plain mob cap may be made of the remnants.

The pattern, No. 6865, is cut in sizes 34 to 44 inches bust measure. Medium size requires 3½ yards of 36-inch material.

Price of pattern 10 *cents.*

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THE
WOMAN'S SOAP

Hardy Flowers for 1915

When the Foliage Has Ceased Growing in the Fall is the Best Time for Transplanting

"IT IS a common idea," writes H. W. Doyle, in *The Country Gentleman*, "that perennials flower continuously, year after year, from the same plants. In reality this is true to only a limited extent. Many hardy herbaceous plants, becoming well established, spread in all directions from the parent stock. The crowns which give the blossoms on most of them flower only for two or three seasons and then die and decay, so that in time the original plant no longer remains—only the progeny.

Because of this spreading habit dense clumps of roots are found, which, when allowed to remain too long in beds, become so crowded that further healthy growth and luxurious flowering are impossible. Weak, scattering growths and unattractive flowers result, not only from this overcrowding but also from the depletion of the fertility of the soil consequent to the continuous drain of these usually strong feeders. It is, therefore, good practice to dig up and divide the roots of many perennials every second or third year, and reset them in well-enriched soil. Of course there are some, peonies and fraxinella being notable examples, that do not need it nearly so often. One can tell by the condition of the plant whether a change is necessary.

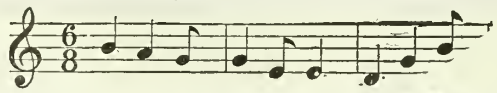
When the foliage has ceased growing in the fall—September or October—or early spring is the best time for dividing and transplanting. Ordinarily early bloomers do best when transplanted in the fall and the late bloomers when moved in spring. If well done the operation may be performed with fairly good success in either season in the case of most of the common and more vigorous perennials. An argument in favor of fall transplanting is that it is a time of less work in the garden than that busy springtime when everything is crying for attention at once.

Among the early bloomers are hollyhock, columbine, larkspur, Canterbury bell, sweet William, pink, foxglove, poppy, rock cress, forget-me-not, Shasta daisy, peony and iris. Some of the more common late bloomers are coreopsis, gaillardia (blanket flower), chrysanthemum, stokesia, phlox, anemone, aster, helianthus, rudbeckia (golden glow) and hibiscus.

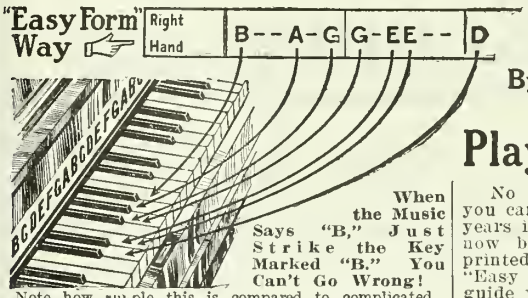
DON'T GIVE YOUR PLANTS DYSPEPSIA.

A spade is a good tool to use in taking up perennials. Sink it down as far as it will go on all sides and then force it under the plant, gently prying the chunk loose. Then lift it out for division. Plants, like the peony, which produce tubers with buds clustered at the apex or crown, need to be divided so that we have a piece of the tuber or crown with one or more buds on it. This piece of tuber attached to the

Old Style Way



"Easy Form" Way



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By This New "Easy Form Method" that Enables a Child or Beginner to

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No more mysterious, difficult notes to learn before you can play the piano or organ. No more spending of years in study and practice. Why? Because music has now been simplified so that anybody who can read printed letters—A-B-C-D-E-F-G—can read the new "Easy Form" music at a glance, and the key-board guide which is placed in back of the key-board shows you where to put the fingers of both hands on the right keys every time.

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9-H

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bud is a miniature storehouse of plant food and supplies the sustenance until new roots are formed. In the case of others it is merely a matter of divding the clump into sections.

Large clumps of plants, like phlox, may be readily divided with a sharp spade. Other kinds of perennials are easily pulled apart with a sidewise motion of the hands. There are some which are best divided or split apart with a sharp knife. Generally, however, there will be found distinct points of cleavage at which the plants readily separate.

It is well to have three or four eyes in the tuberous-rooted kinds, but remember that it is better to have only one eye on a large root than several eyes on a very small one. There must be sufficient food in the storehouse to tide the plant over until it becomes reestablished. In the handling and dividing be as careful as possible not to bruise or damage the plants, especially looking out for the buds, and should any roots show damage it is well to prune them off smoothly with a sharp knife.

Rotation is as good a thing for flowers as for field crops, and if possible the perennial bed or border should be made in a new place. In some cases this is impossible and the old bed must be enriched. Perennials like a deep, moist, rich loam. A word of warning in regard to the term "rich." any people have a very much mistaken idea about enriching the soil. They will dig in great quantities of fresh manure, allowing it to come in direct contact with the plant roots, and then wonder why their plants look sickly. A plant may be nauseated, be given dyspepsia as it were, through heavy applications of fresh manure in actual contact with its roots. So, because a plant is known to be a heavy feeder do not choke and clog its system with more and stronger food than it can assimilate.

When manure is applied immediately before planting it should be thoroughly rotted. Use about a cord to each 300 square feet. Horse manure is best for heavy soils and cow manure for the lighter kinds. Be sure the manure does not come into actual contact with the roots. It is better to plant in soil that has been manured in the season previous. The application of bone meal to the soil, say five pounds to each 100 square feet, is also very desirable. It is a slow-dissolving but a lasting fertilizer.

A very good method of soil preparation is that known as trenching. This consists of digging a series of trenches across the bed, about a foot in width and two blade lengths of the spade in depth. First dig a trench and dig only one blade length deep, likewise placing the dirt to one side. We now have a step-like arrangement. Then dig the bottom blade length of the second trench and place the dirt in the bottom of the first trench. Over this put a three-inch layer of well-rotted manure. Starting the third trench put the top layer of dirt on top of the manure in the first trench. Put the bottom layer of the third trench in the bottom of the second

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trench and add the layer of manure. Place the top layer of the fourth trench over the manure in the second trench, and so on to the last trench, which may be filled with the dirt which was placed to one side. Be careful not to bury the topsoil nor bring the subsoil to the surface. This is important, because no plants do well in subsoil, which is sour, lacks humus, nitrogen and other elements of available fertility, and needs the mellowing effects of the weather. Thoroughly break up all the big lumps as you go along. When through you should have a bed of soft, loose earth containing a three-inch layer of manure. This, when thoroughly raked down and pulverized, is a very suitable place in which to set hardy herbaceous plants.

The roots of the plants should be exposed to dry air and sunshine as little as possible, and if they wilt they should be placed in water for a time to freshen up. Set them immediately afterward. Dig the holes wide and deep enough to accommodate the whole plant without bending the roots. Then gradually work the good rich dirt in among the roots and firmly press it down. Be sure to set the plants deep enough. Plants, like peonies, having crowns and eyes should be set with the eye two or three inches below the surrounding surface.

When the hole is half filled around the plant, pour in enough water to fill it to the top and allow this to seep away before the final filling with dirt. Create and maintain a mulch to prevent evaporation. Plants transplanted in the fall are best protected during the winter with a mulch of straw, hay or coarse manure.

VIRGINIA AND SHEEP-KILLING DOGS.

Too often in Canada we hear complaints by sheep men that they are harassed in their breeding operations by the presence of mongrel curs in the neighborhood. The losses sustained by the sheep-owner by a midnight raid on his flock cannot be computed in the number of sheep that are killed. Where there are dog-taxes and regulating township laws, the evil is largely overcome.

In Virginia which has a large amount of idle waste land, a recent law has made it a misdemeanor, punishable by a fine up to to $50, for the owner to allow his dogs to run at large in the country. All that stands in the way of a profitable sheep industry in Virginia is the presence of these dogs which are kept in large numbers in the shanty settlements. The old dog license law had a tax of $2 per year, but if a sheep-owner shot a stray dog on his premises the owner of the dog would win suit for damages. The recent law makes it necessary for the owner of the dog to be with the dog when it is shot in order to recover damages and in the case of villages or towns, it is a misdemeanor for dogs to be outside of the incorporated limits. It is, therefore, quite probable that the sheep industry in Virginia will advance rapidly.

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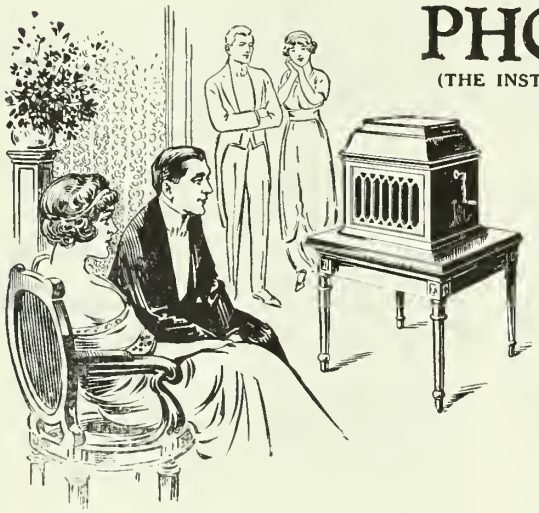

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Unsolicited Editorial From The American Swineherd, Chicago, Ill.

Leading Paper of the United States on Swine Raising

Successful Pig Feeders

"A number of leading expert pig feeders, in giving their method of feeding and handling pigs to protect their health and increase their growth rapidly without fattening them and preventing scours, which is very necessary to the prompt and rapid growth of the pig, was brought about by feeding a small quantity of International Stock Food Tonic.

"Men like Lucien Arbuckle, who has been called the champion pig raiser because of his ability to carry the pig over his pighood, without losing his baby fat, into his shoathood, uses regularly for the purpose of protecting the health and forcing the growth, International Stock Food Tonic.

"Another one of the champion pig feeders and developers who puts them to the front and meets with success is Charles Keller, of Newark, Ohio, and from his long experience has found that International Stock Food is a dependable and reliable aid in producing pigs. It furnishes a tonic that stimulates the appetite, regulates the bowels and prevents scours and is relished by the pigs. It aids in the growth and these gentlemen believe that it is a saving of time, a prevention of disease, and is a help in the growth and development of the pig that is profitable for them to use.

"These two names are leading successful breeders, feeders and developers, while the names of those who use it are legion and are scattered all over the country. Not only in feeding pigs and hogs, but for horses and cattle it is widely used.

"This is in reply to a party who asks if Lucien Arbuckle, whose article some time ago was published, in which he gave as one of the reasons for preventing scours his use of International Stock Food Tonic, and they want to know if he is still using it.

"Our Mr. Cantrall was out to see him this month where he has charge of the herd of W. P. Cowan, near Wheaton, Ill., and he informed us that the buckets of International Stock Food Tonic were observed around at convenient points, so that the pigs were not deprived of it."

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Successful Feeding of Hogs

Value of Barley and Right Management in Getting Quick Returns

By ELUID KESTER

HOG raising promises to be one of the best paying parts of Canadian livestock raising during the coming year. The value of bacon as a food supply is too well known to admit of a shortage. Moreover, farmers are going into grain raising on a more extensive scale. This will mean less attention to pigs, and it is a safe maxim to go at what everybody is leaving.

While the raising of wheat is all-important for the Empire just now, the raising of meats is just as important. The certainty of the livestock raisers' returns is greater. Good hog breeders in Canada, put a great deal of stress on keeping their animals in good digestive heart. A poor stomach means a worthless pig. To keep a pig always growing is the secret of money-making with hogs.

I have had hogs go 200 pounds live weight at five and one-half months. They were fed largely on barley during the finishing stage. They ran in an improvised pen in the orchard and the soil kept their digestion correct. Where feeding is done in cement pens, I always manage to have a small receptacle where a mixture of charcoal, sulphur and salt may be at their disposal.

Feeders in the corn belt, though, have to take more care with their animals and need often condiments.

In Alberta where the hog business has gone forward in three years with great leaps, the feeding tests of one of their experiment stations is of value.

The hogs for the experiment were divided on December 14 into two lots as nearly as evenly as possible there were three Berkshires and one Yorkshire in each lot. They averaged slightly over 70 pounds each at the start. One lot received barley chop and the other shorts; in addition both lots received a small quantity of feed flour and some mangels. The quantities fed daily at start were: Barley or shorts 2¼ lbs. per pig; feed flour, ¾ lbs. per pig; mangels 2 lbs. per pig. These quantities were increased as the pigs grew. It was found that the pigs on the barley could use more feed, and they were consequently given a little heavier ration. The quantities in each case were kept to what the pigs would clean up with relish. The grain feeds were purchased at the following rates: Barley, $15 per ton; shorts $20 per ton; feed flour, $28 per ton. The mangels were grown on the farm and are valued at $2 per ton. The results are as follows:

	Lot 1.	Lot 2.
Number of pigs in lot....	4	4
	lbs.	lbs.
Weight, Dec. 14	292	282
Weight, Feb. 14	492	425

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Gain in two months	200	143
Gain per pig per day	.81	.58
Total barley fed	708	...
Total shorts fed	...	637½
Total feed flour	248½	248½
Total mangels fed	488½	488½
Total cost of feed	$9.52	$10.58
Cost of feed per 100 pounds grain in weight.	$4.26	$7.40

This is certainly a decided victory for barley. Of course, it would always be possible to buy barley at ¾c per lb., but even if it were the same price as the shorts the results would be decidedly in its favor. It is possible that the similarity between the shorts and the feed flour made the ration that contained both not so palatable and well balanced as the one that had barley and feed flour and part of the failure of the shorts was due to that cause.

Last Season's Chicken Troubles

Some Practical Pointers on Rearing by a Man Who Does It

By EDGAR L. VINCENT

ONE MAY have the best of success in the selection of fertile eggs, he may have the art of incubation at his fingers' ends, but if he fails in taking proper care of his chicks after they break through the shell and afterward, he is doomed to failure; for just here is the crucial point in the life of the little birds.

It is only a few days ago that a letter came to me from a lady hundreds of miles away, telling of her dismal failure with chicks. I could not doubt that she wrote that letter with tears in her eyes, as she thought over the way along which she had come; but there surely was a ray of hope in her heart and courage was rising anew for the days to come. She said that last year she hatched out six hundred beautiful chicks; she had great hopes for them as a help in the farm economy, for they were in debt and she thought she might help out with poultry, and yet, in spite of the best efforts she could bestow, all but seventy-five of those chicks died. It was discouraging, but she sorrowed not as one without hope. For, provided chicks are well born, there is no reason why mortality among them should be very great.

BEWARE OF CHILLS.

Let us suppose that the little birds are well out of the shell and ready to look life in the face. What can we do to make it in any way sure that they will reach maturity in good condition to take a place of profit? In the first place a word of caution. When just hatched, chicks do not need anything to eat. What they do want, and what they must have is warmth. The least breath of cold air may chill them when scarcely dry from the egg, and a chilled chick may soon be a dead chick.

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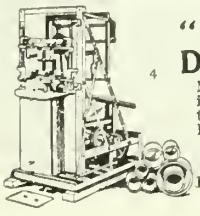

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Balanced Rations

It is well when feeding laying hens to supply at least half of their daily rations in the form of a dry mash; try the following, keeping the hopper open in the afternoons only:—

BY WEIGHT.	BY MEASURE.
26 lbs. Corn Meal	22 qts. Corn Meal
26 lbs. Wheat Middlings	27 qts. Wheat Middlings
13 lbs. Wheat Bran	22 qts. Wheat Bran
5 lbs. Alfalfa	8 qts. Alfalfa
5 lbs. Linseed Oil Cake Meal	3 qts. Oil Cake Meal
24½ lbs. Gunn Shur-Gain Beef Scrap	17 qts. Beef Scrap
½ lb. Salt	¾ pt. Salt

Feed whole grain in a litter night and morning; 2 parts wheat, 2 parts corn, 1 part oats and 1 part buckwheat makes an ideal ration. Cut down night and morning feeding in case of pullets or fowls in heavy laying to induce heavy eating of the dry mash.

This ration should be supplemented with beets, cabbage, sprouted oats, green clover or other succulent food. Gunn's Shur-Gain Grit, Shell and Medicated Charcoal should always be available to the birds.

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WRITE TO-DAY.

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But at the beginning of the first day they may be taken from the incubator out into a good warm hover and fed for the first time. We have found the round hovers that can be moved about from place to place the best. They are easily managed and are not expensive. Most of them are also provided with ways of securing fresh air. A close, stuffy hover, or any other contrivance which does not furnish good ventilation, is simply a place of execution for the young birds. While we must guard against chilling all the time, still it is imperative that the birds should have plenty of good fresh air. Neither should too many be kept in a place. However, if one uses a fireless brooder, which is more and more coming into fashion, twenty-five to fifty of the little birds will generate heat enough to keep each other warm if their house is otherwise comfortable.

GOOD FEED FOR CHICKS.

Probably if you were to ask a thousand people how to feed chicks, you would get about as many answers as you asked men; but here is a simple and yet very effective method, one that will probably lead to as good success as any that can be devised. Take common wheat bread, toast it well in the oven, grind it fine and mix it with eggs that have been boiled hard and chopped well. The shells and all may be either crushed or ground in with the rest, and if you add a bit of onion, it will help to make the ration more effective.

When the little fellows are a few days old, you may begin to add some good commercial chick feed. Notice where the emphasis is placed in that last sentence, because there are feeds that save and feeds that kill. Be sure what you give them. By this time you may have a little shallow litter on the floor, not too deep at any time, so as to tangle the legs of the little birds, but making it deeper as the legs stretch out. Into this drop the chick feed. They will begin to hunt for it sooner than you think. They will pick at any kind of green feed you may give them, too, such as lettuce leaves, sprouted oats or any such thing, and it is excellent for them. Keep it up from this time on.

JOHNNY CAKE.

After the birds are well on their feet, three weeks old or so, begin to give them a bit heavier feed. Our folks think a great deal of cornmeal johnny cake. Make it good and hard and crumble it all up fine, and the birds will rush for it in a way to do your heart good. When we began on the farm, wife used to make the very first ration of cornmeal mixed with milk or water, not thin, but just so it would hold together. The birds did well on it, too.

As the birds grow larger, you may get them onto cracked corn and wheat. Steel-cut oats are also fine. But make all changes in diet slowly. Dry wheat bran in the little hoppers makes a good change. Soon a mite of bone meal and meat feed may be added, and very early, attention must be paid to small-sized grit and charcoal. From the beginning water should be kept where the birds can get it as they need it, and this must always be pure and fresh.

At every step of the way guard against dampness. One of the banes of the poultry business, anyway, is the damp. In fact, I doubt if you can have healthy hens or chicks unless you do everything you can to keep them dry.

FILTH KILLS.

Then, too, there is that word so many of us have come to fairly hate—cleanliness—and yet it is one that must be used over and over again, for are we not all too lax along this line? Hope is lost when cleanliness is gone. Feed, water, brooding—everything else may be present, but filth kills.

As the birds grow, of course, they must have larger quarters. You often see a great big flock of chicks huddled together in a space far too small for them. No surer way to invite loss and failure than that. Give them room. Feed only the very best of food, love them, yes, that is just the word, for if you do not, you might as well get out of the poultry business now as any time, for your fate is sealed. Love them and guard them against any and all foes, and you will have no such story to tell as the lady of whom mention was made above.

WHITE GRUBS NEXT YEAR.

Many farmers know what the June Bug is, or as it is called by some, the May Beetle. These have been extremely abundant the past spring not only in the northern United States, but in many parts of Canada. This fact will indicate a great abundance of white grubs in 1915, and these will likely do as much, if not more, injury than they did in 1912 when farmers remember their great prevalence in the soil. The white grub is the second stage of life of the May Beetle and works great havoc by cutting the roots of growing plants. To insure against a repetition of the past damage it will be well for the farmers to specially cultivate their fields this fall. Owing to the fact that the grubs go down into the ground on the approach of cold weather, fields ought to be thoroughly plowed in October, where possible hogs and poultry should be turned to run on the plowed ground. They will destroy a great number of them. A thorough disking should follow the plowing. In the spring he should cultivate well also and in Ontario it has been found beneficial to use a liberal supply of salt on the land before seeding.

This grub has a three-year life cycle, that is the beetles during 1914 deposit eggs which hatch about a month after they are laid. The young grubs feed on roots and decaying matter and do not do much damage the first year. The next year they are larger and feed almost entirely on living roots, preferably potatoes, timothy, strawberries, etc. The next year they feed more or less, but by June 1st., they make earthen cells, become semi-dormant and in a fortnight or so change to brown pupae and in a month to beetles in which condition they remain in the ground until the next spring.

Curing Meat on the Farm

Using Only Old Fashioned Preservatives, A Hardwood Barrel, or a Large Stone Crock

THE best way to eat meat is to eat it while fresh, for there is no way of perserving it that will retain all the nutrition and all the flavor. It is, nevertheless, frequently desirable to cure meat at home, and there is no reason why this cannot be done satisfactorily and economically. Salt, sugar or molasses, baking soda, and a little saltpeter are the only ingredients necessary.

Ordinarily the curing of meat should be begun from 24 to 36 hours after the animal is slaughtered. This allows sufficient time for the animal heat to leave the meat entirely, but not sufficient to permit decay to set in. Once the meat is tainted, no amount of preservatives will bring back its proper flavor. On the other hand, if salt is applied too soon, obnoxious gases will be retained and the meat will possess an offensive odor. It is also impossible to obtain good results when the meat is frozen.

Three useful recipes for popular forms of cured meat are given below. The only equipment necessary for them are the ingredients already mentioned and a clean hardwood barrel, or a large stone jar or crock. In considering these recipes it is well to remember that, on the whole, brine-cured meats are best for farm use. They are less trouble to prepare and the brine affords better protection against insects and vermin. A cool, moist cellar is the best place for brine curing. The cellar should be dark and tight enough to prevent flies and vermin.

CORN BEEF.

The pieces commonly used for corning are the plate, rump, cross ribs, and brisket, or, in other words, the cheaper cuts of meat. The loin, ribs, and other fancy cuts are more often used fresh, and since there is more or less waste of nutrients in corning, this is well. The pieces for corning should be cut into convenient-sized joints, say 5 or 6 inches square. It should be the aim to cut them all about the same thickness, so that they will make an even layer in the barrel.

Meat from fat animals makes choicer corned beef than that from poor animals. When the meat is thoroughly cooled it should be corned as soon as possible, as any decay in the meat is likely to spoil the brine during the corning process. Under no circumstances should the meat be brined while it is frozen. Weigh out the meat and allow 8 pounds of salt to each 100 pounds; sprinkle a layer of salt one-quarter of an inch in depth over the bottom of the barrel; pack in as closely as possible the cuts of meat, making a layer 5 or 6 inches in thickness; then put on a layer of salt, following that with another layer of meat; repeat until the meat and salt have all been packed in the barrel, care being used to reserve salt enough for a good layer over the top. After the package has stood over night add, for every 100 pounds of meat, 4 pounds of sugar, 2 ounces of baking soda, and 4 ounces of saltpeter dissolved in a gallon of tepid water. Three galls more of water should be sufficient to cover this quantity. In case more or less than 100 pounds of meat is to be corned, make the brine in the proportion given. A loose board cover, weighted down with a heavy stone or piece of iron should be put on the meat to keep all of it under the brine. In case any should project, rust would start and the brine would spoil in a short time.

It is not necessary to boil the brine except in warm weather. If the meat has been corned during the winter and must be kept into the summer season, it would be well to watch the brine closely during the spring, as it is more likely to spoil at that time than at any other season. If the brine appears to be ropy or does not drip freely from the finger when immersed and lifted, it should be turned off and new brine added, after carefully washing the meat. The sugar or molasses in the brine has a tendency to ferment, and, unless the brine is kept in a cool place, there is sometimes trouble from this source. The meat should be kept in the brine 28 to 40 days to secure thorough corning.

DRIED BEEF.

The round is commonly used for dried beef, the inside of the thigh being considered the choicest piece, as it is slightly more tender than the outside of the round. The round should be cut lengthwise of the grain of the meat in preparing for dried beef, so that the muscle fibres may be cut crosswise when the dried beef is sliced for table use. A tight jar or cask is necessary for curing. The process is as follows: To each 100 pounds of meat weigh out 5 pounds of salt, 3 pounds of granulated sugar, and 2 ounces of saltpeter; mix thoroughly together. Rub the meat on all surfaces with a third of the mixture and pack it in the jar as tightly as possible. Allow it to remain three days, when it should be removed and rubbed again with another third of the mixture. In repacking put at the bottom the pieces that were on top the first time.

"GILT EDGE"

The only black dressing for ladies' and children's shoes that positively contains **OIL**. Softens and preserves. Imparts a beautiful black lustre. **LARGEST QUANTITY, FINEST QUALITY.** Its use saves time, labor and brushes, as it **Shines without brushing. Sponge in every bottle so Always Ready for Use. 25c.**

"ELITE" combination for gentlemen who take pride in having their shoes look A1. Restores color and lustre to all black shoes. Polish with a brush or cloth, 25 cents. **"BABY ELITE"** size, 10c.

"DANDY" combination for **cleaning and polishing** all kinds of russet or tan shoes, 25c. **"STAR"** size, 10c.

"BULLY SHINE." A **water-proof** paste polish for **all** kinds of black shoes and **old** rubbers. Blacks, polishes, softens and preserves. Contains **oils** and **waxes** to **polish** and **preserve** the leather. **Large** tin boxes 10c. Boxes open with a key. Russet "Bully Shine" same size and price.

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Made of best known fibre, 2 years' guarantee. **Mailed anywhere 35c and 50c.**

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WANTED—TRAVELER TO HANDLE WELL-known line in Western Canada. Apply Box 64, Farmer's Magazine, 143 University Ave., Toronto.

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BOOKS FOR THE FARM.

CHEMISTRY ON THE FARM. BY R. WARRINGTON, F.C.S. Treating with the utmost clearness and conciseness, and in the most popular manner possible of the relations of chemistry to agriculture, and providing a manual for those not having time to systematically study chemistry and its relation to operations on the farm. 120 pages, 5 x 7 inches. Cloth, $1.00. Technical Book Dept., MacLean Pub. Co., 143 University Ave., Toronto.

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U. S. GOVERNMENT USES RICHMOND Chemical Extinguishers that kill Gasoline fires. Auto and factory sizes. District managers make 500% profit. Auto free. Richmond Chemical Co., Div. "U," Wheeling, W. Va. (9)

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THE DE BRISAY METHOD IS THE ROYAL road to Latin, French, German, Spanish. Thorough mail courses. Students everywhere. Highest references. Academie De Brisay, Ottawa. (3-15)

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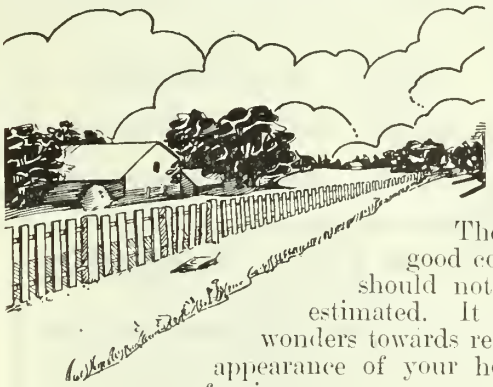
FREE FOR SIX MONTHS—MY SPECIAL offer to introduce my magazine "Investing for Profit." It is worth $10 a copy to anyone who has been getting poorer while the rich, richer. It demonstrates the real earning power of money, and shows how anyone, no matter how poor, can acquire riches. Investing for Profit is the only progressive financial journal published. It shows how $100 grows to $2,200. Write now and I'll send it six months free. H. L. Barber, 468, 20 W. Jackson Blvd., Chicago.

FARMS WANTED.

WANTED—FARMS FROM OWNERS FOR sale. We have direct buyers. Send description. Magazine, particulars free. D. F. Bush, Minneapolis, Minn. (10)

FARMS FOR SALE.

FARMS FOR SALE — SEVERAL VERY cheap; one worth $3,000 for $1,700 cash. Subject to withdrawal at any time without notice. Russell Hartney, Solicitor, Saskatoon, Sask. (9)



The Use of Good Paint is Economy

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will add value to your farm and cheerfulness to the home. Fifty years' experience has made us proficient in the art of paint making. Insist on your dealer supplying you with JAMIESON'S.

Ask your dealer or write us direct for free sample cards.

R. C. JAMIESON & CO., LIMITED

Montreal Established 1858 **Vancouver**

Owning and Operating P. D. Dods & Company, Limited

Land O'Gold

Continued from Page 22.

who did had contracted already for all that they could handle.

"In Moose Jaw I found a man who had the ability to see a real opportunity . His name is Wilson and he is the head of the grocery department of the Whitelake Wholesale Grocery Company.

"A story will illustrate this man's ability. He had been there just two years, but had wonderfully extended the business. The company has four large branches and when Wilson came he was attracted very much by a new brand of pickles. He ordered a whole carload from the Winnipeg manager and secured selling rights in a large territory. They said he was crazy but in two years he had disposed of twenty-seven carloads.

"He looked at my carton and it took him just fifteen minutes to buy. He took a hundred cases although he had a large quantity on hand already. He desired selling rights throughout Saskatchewan, but we didn't come to any agreement just then.

"I continued on my way and sold fifty cases to the Beaver Company. I visited the Elk Company and in ten minutes I sold the remaining one hundred cases.

"On April 25th, I started for Moose Jaw again. I interviewed Wilson at once.

"I can handle two hundred cases right now," he said. "Send for them at once. Wire back to-day."

"But I had to superintend the loading myself. As the Beaver Grocery Company took the extra fifty cases I started homeward that night. In seven days from the day I first left home I had my apples loaded and on the road to Moose Jaw.

"Here's a bunch of letters I've brought with me from wholesalers in the West desiring exclusive selling rights. Wilson alone offers to take ten carloads this fall, and my largest output will not exceed five.

"What is my proposition? Well here you have it. I want to organize a great company to build a chain of plants around the lakes. The British Columbia Government has just passed a bill to prevent shipping No. 2's out of the province. See the chance? Build out there and control the Pacific Coast trade, too. You've got to do something with your No. 2's soon. Evaporate them. We can corner the trade.

"Consider the name I've got. It's worth money. We can advertise all over Canada. If peaches and all sorts of fruit can be canned we can evaporate apples. They are a more universal food than any of them.

"Now I haven't the money. I made out alright on this deal, but my idea will take big money. They swear by you in this county. The banks are behind you and so are monied men. Then you can see an opportunity or you wouldn't be here."

"Well, what do you say?" he enquired, as he sat back after his outburst.

I sized him up. He was a worker, and he had a shrewd eye.

"I'm just thinking how well Jackson, Robinson & Company might look after all."

He was right. There was a great future in it. We have the men who are too crooked to put up good food and who can't apply straight business to their work, running already. Our company hasn't expanded like it will by any means. But even now little Jake won't have to worry over his college course if I'm cut off suddenly. Fifteen years from now when you see my rating it won't stop with six figures, if all goes well.

Last Sunday I motored out to Land O' Gold with Grace and the kiddies.

"Well, how's the rural problem coming on, Jake?" I asked, after dinner.

"Oh, alright," said Jake. The fellows who have it in them to make good are reaching the pay-dirt and the others will always find life a problem anywhere. A good number of the lads are going to Guelph now to the college. Funny, there's Bill Mason sending young Fred down. Bill and his wife were just over last night. Mrs. Bill doesn't look like she used to. She's a new woman. You should hear her talk to Molly about Dicken's novels. I guess she'd cried over every poor little girl and boy in them.

"No, Jimmie, there ain't no such beast as a rural problem where the men study management and the women home improvement. A few dreams mixed with the hard grind and new persons are shaken from the magician's hat. But I know of but one thing that can accomplish this. You discovered it long ago. It's leadership.

"No," I answered. "I didn't discover that. Grace did it all. She awakened me from a very dreamless slumber in the first place. The idea just grew after that."

Grace just smiled warmly over at me. But that night when we were going down the drive, she snuggled up close with baby Grace.

"Isn't the moonlight beautiful," she whispered. "What a grand old place this is among the orchards and the people you have worked for. Please, Jimmie, let us postpone our trip to Europe and build a home out here on dear old Land O' Gold where the kiddies can breathe and grow. They can twine their wee fingers about our hearts then and we two can live our lives together and with them. And then I can help Mary in her work with the ladies out here.

Away upon the distant knoll I caught the glimmer of a white stone under the pines.

"God bless you, little girl," I answered. "I have been true to my salt. The home will be ready before the first snow."

THE END.

THE ROYAL BANK OF CANADA

INCORPORATED 1869

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Reserve Funds - - 13,575,000

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JOINT ACCOUNTS An account in the names of two members of a family will be found convenient. Either person (or the survivor) may operate the account.

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335 BRANCHES THROUGHOUT CANADA

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KANT KRACK TRADE MARK COATED LINEN Collars

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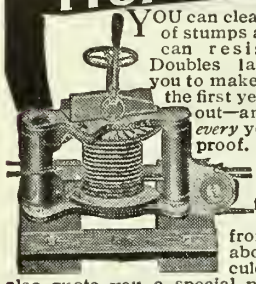

YOU can clear an acre or more of stumps a day. No stumps can resist the Hercules. Doubles land value—enables you to make $1200.00 on 40 acres the first year after stumps are out—and $750.00 in crops *every* year after. Get the proof. Why not

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Book tells all the facts—shows many photos and letters from owners—tells all about the many Hercules features. We'll also quote you a special money-saving price proposition that *will interest you.* Address

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"My barn that was

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was fitted with Crumb's Warriner Stanchions. If it had not been for the ease with which these fasteners were opened I should have lost my cows," writes Mr. Everett Gains, Bernardstown, Mass. Booklet Free.

WALLACE B. CRUMB, F5, Forestville, Conn., U.S.A.
Canadian orders filled from Canadian factory.
All correspondence should be addressed to the home office. State in inquiry if you prefer booklet in French or English.

All questions from our subscribers are welcomed. Write plainly on one side of the paper. If personal reply desired, send stamp.

Rural Mail Enquiries

Address all letters to Grasmere, Farmer's Magazine, MacLean Publishing Co., Toronto.

OXFORDS FOR BREEDING.

M. N. S., Sask.—Where can I get good Oxford Down rams for upgrading my flock of range ewes? Would prefer Ontario breeders.

Answer.—There are several good breeders of Oxford Down sheep in Ontario. Write to Mr. John Brant, Accountant of the National Live Stock Records who will be able to advise you and will also give you any information about shipping rates.

ALFALFA SEEDING.

J. P. R., Manitoba.—I would like to get a good catch of alfalfa as I believe it would furnish me with more and better hay for my mixed farming plans. When is the best time to sow it, and would you use a nurse crop?

Answer.—Alfalfa is giving a very good account of itself, especially in the south half of your Province. The Provincial Department of Agriculture is doing some good experimental work with it. On their fields at Baldur there is a magnificent stand this year where the alfalfa was sown on clean ground in the spring. The crop was clipped in July and the clover left on the field. They ought to have a good stand next year. It would be risky using a nurse crop unless the conditions were very favorable in the matter of fertility and moisture. Write the Deputy Minister, Mr. Bedford for his results.

BUNGALOW PLANS.

F. J. K., Alberta.—Can you send me the blue prints for the Bungalow for the prairie as given on page 19 of the September FARMER'S. I find these articles on house-building very interesting.

Answer.—We do not furnish blue prints for these house plans. We publish the floor plans and give the general appearance. These are intended as a guide for farmers who are going to build. They can be added to or rearranged as individual needs may require, and any architect would be able to incorporate the ideas into your plans.

RATIONS FOR A COW.

F. L. S., Ontario, asks.—Sends me a balanced ration for a Holstein cow weighing about 1,200 lbs. and now thin owing to the dry summer. I have wheat, peas, clover and ensilage, and am stabling the herd except for a few hours daily.

Answer.—For roughage our correspondent should give her all the hay and clover that she will clean up nicely, with this, a good grain mixture would be eight parts shorts, two parts bran, three parts pea meal, five parts oats and four parts oil cake. Feed one pound of this mixture to each four lbs. of milk produced

WHEAT FOR HOGS.

J. K., Man.—In feeding wheat to hogs, would it be better to grind it or to feed it whole after soaking it?

Answer.—Our correspondent will find the experiments of the Nebraska Experimental Station on this question of much interest. A test was made on four lots of pigs, feeding soaked whole wheat and soaked ground wheat. The results summed up, were as follows:—

1. Three pounds of soaked ground wheat produced as much gain as four pounds of soaked whole wheat.
2. Ground wheat at $1 per bushel proved as economical as whole wheat at 75c. per bushel. At a cost of four cents per bushel for grinding, the net profit due to grinding amounts to 21c. per bushel.
3. Ground wheat produced gains 42% faster than whole wheat.
4. A noticeable amount of whole wheat passed through the pigs undigested.

It will be noted, therefore, that the loss in feeding whole wheat is enormous.

THE ARMY REMOUNT.

J. B. S., Quebec.—What kind of horse does the army official require for service?

Answer.—The horse needed for the army is one that is sound, well-bred and capable of pulling his share in a six-horse team of artillery, dragging over bad roads or no roads at all a field gun or ammunition wagon. Such a horse according to the United States standard for their army in peace times must be 15½ hands high and weigh from 1,150 to 1,200 lbs. Each animal must be well broken, solid colors being preferred except grey or white. Of course the artillery horse is heavier than the cavalry horse which weighs from 950 to 1,100 lbs. Mares are accepted as well as geldings although geldings are preferred.

ARMAGEDDON.

J. T. S., Alta.—What does armageddon mean?
Answer.—For armageddon see Lev. XVI., 16

A WATER SYSTEM.

J. B., New Brunswick.—I would like a description of how to install a water system in my farm home. I have a good supply from a spring.

Answer.—On page 23 in the May issue of FARMER'S MAGAZINE there appeared an excellent article on this. If you have not this issue at hand let us know and we will send you one.

MATURING VINEGAR.

F. K. R., Ontario.—As apples are likely to be cheaper than usual this year, and as I propose to turn some of mine into cider, could you tell me how to make vinegar from it?

Answer.—The first step in making hard cider into vinegar is to wash out the barrels thoroughly and to drain off the clear, hard cider into them, leaving the sediment behind. Fill the barrels about two-thirds full, and add to the cider of each barrel two or three quarts of good vinegar in which there is "mother." Mother is not the dirty, brown, leathery stuff which is so often found in vinegar, and is called by so many people by that name. "Mother" is the thin, white glistening film that forms on the surface of vinegar. It is this thin, white film which should be added to hard cider when it is desired to change it to vinegar. Don't add the brown leathery stuff. After the "mother" is added, keep the cider at a temperature of 65 to 75 degrees. Keep a hole in the top of the barrel open, but with a little netting nailed across to keep out insects. "Mother" of vinegar in order to do quick work must have plenty of air and a warm temperature. Under such conditions it can change hard cider into vinegar in from three to six months.

A GIRL WANTED.

J. P., Alberta: Can you send me one or two addresses of firms or correspondence papers where a man could find a woman or a girl.

Answer.—Presumably our reader desires farm help in the house. If he will advertise in his local paper he will likely have some replies that will be able to meet his case. Hired help is very hard to get in the country, although present conditions ought to make it better for such people as J. P.

Spanish Gold

Continued from Page 26.

"I think I have a bit in my dressing-case," said Mr. Willoughby.

"I'll want a good big bit—yards of it, I expect. I'm not sure till I get my clothes off, but I fancy there are very few parts of me just this minute with the skin on."

"I'll send you what I have. And now, Sir Giles, I must get a dry suit of clothes for you."

In about half an hour the party reassembled for breakfast. Mr. Willoughby made another appeal for an explanation of the morning's events.

"I told you my story," said Meldon, "and Sir Giles contradicted me flat—not that I mind being contradicted. I'm accustomed to it. But I think it's his turn to speak now. Anyway I want to eat my breakfast."

Sir Giles was not eating heartily, but he seemed unwilling to speak.

"You hinted," said Mr. Willoughby to Sir Giles, "that the account which Mr. Meldon gave us of his actions was—er—perhaps exaggerated."

"'Damned lies' was his expression," said Meldon. "I don't know if that's your idea of a hint that I exaggerated."

"You appeared to think," said Mr. Willoughby, "that Mr. Meldon omitted from his statement some points of interest."

Meldon, whose mouth was full, got into difficulties in suppressing a laugh. Sir Giles stared sulkily at Mr. Willoughby.

"Come, now," said Father Mulcrone, "let's have your story. You'll feel easier when it's off your mind."

"I'm not in your confessional," said Sir Giles, "and I'm damned if I'll speak unless I choose."

"Come, gentlemen," said Mr. Willoughby, "we needn't any of us lose our tempers. I think, Sir Giles, that you are bound either to substantiate or withdraw the very offensive statement that you made on the pier this morning. You called Mr. Meldon a liar."

"So far as I'm concerned," said Meldon, "I don't mind that in the least. I'm quite accustomed to it. There's hardly a man on this island who hasn't called me a liar. I quite recognize that Sir Giles' temper wasn't altogether under control when he spoke. He has a hot temper. I've had to speak to him about it before."

"I suppose that you think it good fun," said Sir Giles, "to sit there bating me and setting that cursed curate on to sling insults at me. But I've stood all I'm going to stand of it. I'll stay here no longer. Come, Langton."

The whole party, with the exception of Meldon, stood up.

The Carrier For You

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LOUDEN Litter Carrier

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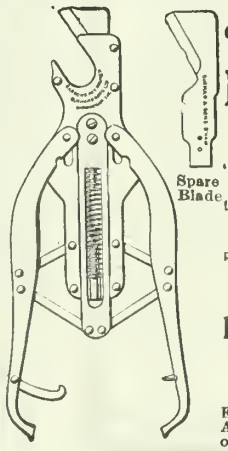

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gives permanent protection, guaranteed for 15 years. Accept no substitutes, get the time-tested Roofing with the CERTAIN-TEED QUALITY LABEL.

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The combination gives the lowest possible trajectory, practically doing away with the necessity of judging distances, and the "shocking" power of the Ross Copper tube bullet brings down any game it hits.

Sportsmen all over the World are adopting the "Ross" .280, and using its special ammunition.

Ross .280 High Velocity Rifles $55.00. Ammunition, $7.50 per 100. Other model Ross Rifles from $12.

Full illustrated catalogue on request.

Ross Rifle Co., Quebec

"Don't go away like this," said Mr. Willoughby to Sir Giles. "Sit down again and talk things over, I am sure we can come to some understanding if we can only find out what all this trouble is about."

"Make your mind easy," said Meldon, "he can't go just yet."

"Can't go!!" said Sir Giles furiously. "Why not? Who's going to stop me? So far as I know, nobody has a warrant out for my arrest."

"You can't go yet," said Meldon, "because you've got on the Chief Secretary's Sunday clothes."

Father Mulcrone burst into a loud laugh.

"That's easily remedied," said Sir Giles. "I'll change."

"Please don't worry about the clothes," said Mr. Willoughby. "You're welcome to them. I wouldn't like you to put on your own things yet. They can't be dry."

"Lend him your pink pyjamas," said Meldon.

For a moment it seemed likely that Sir Giles would make a violent assault on Meldon. His hand twitched. His face was deeply flushed. But he restrained himself and went into the cabin where his own clothes lay.

"This is an extraordinary business," said Mr. Willoughby. "Surely, Mr. Meldon, you'll tell me what it all means."

"He can't go far," said Meldon. "I'm prepared to bet my best hat that there's a hole in the bottom of the Aureole and the Major won't take him in the Spindrift."

"I don't like it at all," said Mr. Willoughby plaintively. "I hate being kept in the dark."

He took Father Mulcrone aside and spoke to him.

"What do you advise?" he said. "What do you think of all this?"

"I think," said the priest, "that you and I had better go ashore with Sir Giles and the other man. I expect the people on the island know the ins and outs of the whole story by this time, and I'll be able to get it from some of them. There's been some rough work during the night. You saw the state Mr. Meldon was in when he came on board. I expect that Sir Giles, whoever he may be, has been up to some mischief. I don't like that man."

"Still, it's an awkward affair. It seems to me that we're aiding and abetting Mr. Meldon in robbery, and something like an attempt at murder. He threw Sir Giles into the sea, you know."

"I expect Mr. Meldon's all right. But we can't say anything till we get on shore and hear the whole story."

Mr. Willoughby turned to Meldon.

"Father Mulcrone and I," he said, "have decided to go— Dear me, he's fast asleep!"

Meldon had fallen forward. His head lay among the crumbs beside his plate on the breakfast-table. His arms sprawled among the cups and dishes. A half-smoked cigar burned a hole in the tablecloth. Meldon slumbered profoundly.

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CHAPTER XXII.

TWO hours later Mr. Willoughby and Father Mulcrone returned to the Granuaile. The Chief Secretary's face wore an expression of delight, tempered by anxiety. Father Mulcrone was jubilant and triumphant. They descended at once to the cabin where Meldon still slept on the sofa. Father Mulcrone shook him vigorously.

"Mr. Meldon, wake up; wake up at once!"

Meldon opened his eyes, and saw the Chief Secretary and the priest standing over him.

"Hullo!" he said. "I believe I must have had a nap. Breakfast has been cleared away, I see. I wonder what they did with my cigar. I had a cigar, I know, and I don't believe I finished it."

"Here's the box," said Mr. Willoughby, "take another."

"Thanks, I will. Where are Sir Giles and Langton? They were here at breakfast, weren't they?"

"They're on shore," said Mr. Willoughby.

"Oh, are they? They haven't gone off in the Aureole by any chance?"

The priest smiled. "They have not," he said.

"I told you they wouldn't—couldn't in fact. Nobody but me knows how rotten that boat is and what a little bump would knock a hole in her."

"We've been on shore," said Mr. Willoughby.

"Have you? Pleasant spot that island. I wonder more people don't come here in the summer."

"We heard the whole story," said Mr. Willoughby, "and we both want to congratulate you on the way you behaved."

"Now, who did you hear it from?"

"Well, partly from Thomas O'Flaherty and——"

"I didn't think the old boy was such a fool."

"And partly," went on Mr. Willoughby, "from a little girl."

"Mary Kate O'Flaherty," said the priest.

"I thought better of Mary Kate," said Meldon. "She ought to have had a keener eye to her own interest than to tell that story. I suppose you've grabbed the treasure in the name of the Government."

"He has not, then," said Father Mulcrone grinning.

"No," said Mr. Willoughby. "There was no treasure to grab. At least we couldn't find any. To put the matter plainly, the Aureole has been looted."

"That's all right," said Meldon. "I wouldn't have liked to see poor old Thomas O'Flaherty Pat robbed by the Government any more than by Sir Giles. But how did you get the story? As far as I know Thomas O'Flaherty he's not the sort of man to talk more than he need, and I never got more than half a dozen words and grin out of Mary Kate at one time."

"The way of it was this," said Father Mulcrone. "No sooner did Sir Giles and

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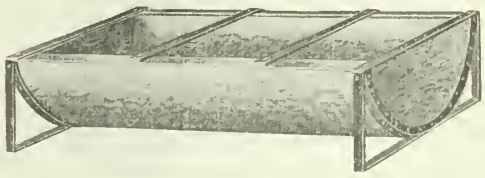

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Langton leave us to go down to the Aureole than all the children on the island, seven or eight of them, began to boo at them and throw stones. Mary Kate O'Flaherty was at the head of the crowd."

"She would," said Meldon. "I always said she was a high-spirited little thing besides being intelligent. I expect, now, she hit them with as many as three out of every four stones she threw."

"I shouldn't wonder," said the priest. "Anyhow, Sir Giles lost his temper."

"He's always doing that. I hope he didn't hurt Mary Kate in any way or use language that a little girl oughtn't to listen to."

"The language," said Mr. Willoughby, "so far as I could hear it—I was some way off—was pretty bad. But he didn't do the children any bodily harm."

"It wasn't for want of wishing to if he didn't," said the priest. "He looked as if he'd have been glad to skin the lot of them alive and pickle them afterwards."

"They ran for their lives, I suppose?"

"No, then, they did not. But the fathers and the mothers of them came at Sir Giles with scythes and pitchforks and hayrakes and all sorts. It was then we thought we'd better interfere. Well, I'm not a coward exactly. You'll give me credit for that. But I give you my word I didn't fancy running into that crowd at all. I could have faced the men right enough, but the women——! Did ever you notice, Mr. Meldon, that a woman when she gets her blood up is twice as reckless as any man? She doesn't care who she hits or where she hits him. I tell you I thought twice about facing the women. But the Chief Secretary is a hero, a regular hero."

"It was nothing," said Mr. Willoughby modestly. "I'm accustomed to women. A Cabinet Minister must be nowadays. If he didn't get hardened to it he would be dead in a year."

"Anyway you went for them like an hero," said Father Mulcrone. "I never admired a man more."

"I'll tell you what it is," said Meldon to the priest, "you ought to let him off those seed potatoes as a token of your respect and esteem."

"I will," said the priest. "I'll do that. I wish you'd seen young Mrs. O'Flaherty brandishing a flail and looking as if she'd skelp an archbishop if he came her way."

"Had she Michael Pat with her?"

"She had not."

"Well, if nobody was left at home to mind Michael Pat I expect the old woman's dead by now. But that can't be helped. Go on with the story."

"We got them quietened down after a bit," said Father Mulcrone, "and then Mr. Willoughby made them a short speech."

"And did old O'Flaherty get his treasure back safe?"

"I didn't get any very definite information about the treasure," said Mr. Willoughby.

"If you ask me," said Father Mulcrone, "I should say that every man of the

island has his own whack of that treasure by this time. If half old O'Flaherty says is true, they have money enough among them

CHAPTER XXIII.

TWO years later Major Kent took another cruise in the Spindrift, this time with a hired man to assist him in managing the boat. He anchored for an hour in the bay at Inishgowlan, and then, not feeling inclined to go ashore alone, sailed on to Inishmore. He found Father Mulcrone in the presbytery and invited him to spend the evening in the cabin of the Spindrift. There had been a change of government some months before, and Mr. Willoughby had left Ireland. The priest lamented his loss.

"The new man's not his equal," he said. "I don't say but what he means well. Only it's my belief that he'll never understand this country. I met him when he was round seeing the West. I told him the way the treasure was found on Inishgowlan, and what do you think he said to me?"

"I don't know," said the Major. "What was it?"

"He said, 'That's a good story, Father Mulcrone.' Now that was as much as to tell me to my face that the story wasn't one an honest man would take his oath to in a court of justice. There's unbelief for you. A fellow that starts off by thinking himself clever enough to know what's true and what isn't will do no good in Ireland. A simple-hearted, innocent kind of a man has a better chance."

"One like Higginbotham?" said the Major.

"I hear he's high up now, earning a good salary. He deserves it. How's Mr Meldon getting along with his parish?"

"I was over there last summer," said the Major.

"I was standing godfather to the baby. She had another godfather, too, which is unusual with a girl. It was Mr. Willoughby stood along with me."

"And what did they call her?"

"Cecily May was the name the mother chose."

"But what about the parish? I heard the men in it were a rough lot and disrespectful to their clergy."

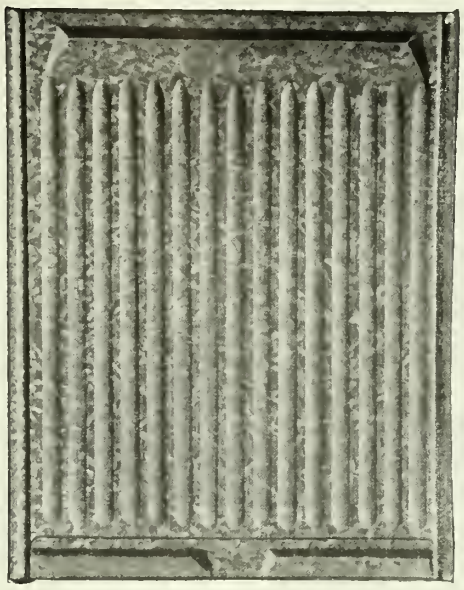
"They're cured of that now. There was a man there, a sort of leader among the colliers, who set up to be an agnostic or something of that kind, and was for ever talking to the rest of them about the folly of believing what the clergy said."

"A fellow like that would turn the milk with his blasphemies. I've heard of such."

"Well, the Rev. J. J. used to go to that man's house two evenings in the week and argue with him. The rest of the people took to coming to listen until they had to move into the schoolroom to accommodate the congregation. By the time I got over there that agnostic was singing in the choir with a surplice on him."

"He was convinced in the end, then?"

"I'm not sure that he was convinced.



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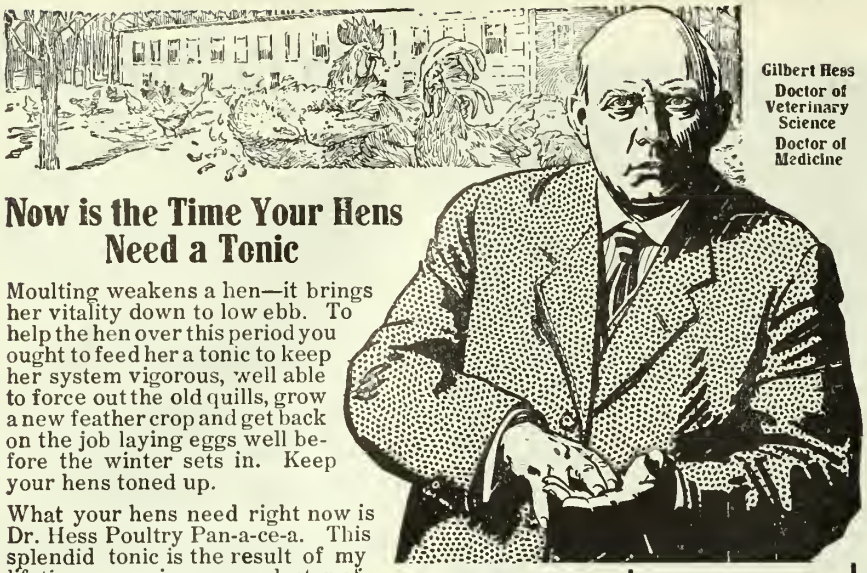

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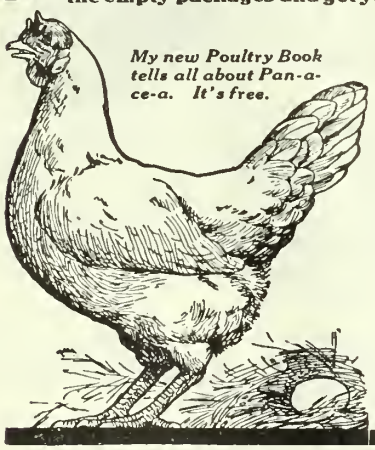

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I was talking to him one day and he told me, privately, that he wasn't any more persuaded than ever he was. He said he'd lost his taste for arguing. My own belief is that the man was cowed, and that if J. J. had wanted him to swear publicly to the truth of all the confessions of faith of all the Churches in Christendom he'd have done it for fear of having to argue any more. And he wasn't the only man in the place that changed his way of living. There was more than one that gave up beating his wife on account of the amount of talk he got from J. J. whenever he was caught at it. The very worst of them mended their language. You'd see a man looking round him and up and down the road before he'd venture on a simple 'damn.' I needn't tell you, Father Mulcrone, that the necessity for that sort of precaution takes all the pleasure out of a swear. And as for drink——"

"What did he do about the drink? I've had my own trouble over that. Since ever the people of Inishgowlan got the gold out of the yacht I've been administering the temperance pledge to them in batches of half a dozen at a time, and often to the same lot twice in six months. I'd like to hear what Mr. Meldon did about the drink."

"I don't quite know how he did it," said the Major, "but I'm told that whenever a man in that parish feels that he must have a burst he goes off somewhere else and doesn't come back till there isn't a sign left on him of what he's been doing. And even so he's generally made to feel sorry for himself."

"I'd like to have a talk with Mr. Meldon about the way he manages."

THE END.

The New Aroostook War

Loading Potato Guns With Powdery Scab and Fighting for Positions

By A. M. BELDING

THE difference between the old "Aroostook War" and the new Aroostook war is the difference between powder and powdery scab. The old war, as readers of American and Canadian history will remember, had to do with a boundary line, and men from New Brunswick and men from Maine loaded their guns and would have potted each other in the northern wilderness as cheerfully as the modern hunter pots a man whom he mistakes for a deer in that same region. But that war was averted by diplomacy and no lives were lost.

The new Aroostook war is quite another affair. It is between the potato-growers of Aroostook County in Maine and their farmer-neighbors across the New Brunswick line, and it was precipitated by President Wilson. When that eminent and vigorous fiscal reformer in-

sisted that Congress must enact a law to give Canadian potatoes free entry to the American market, the Aroostook farmers took the field.

A happy thought occurred to an Aroostook Cincinnatus, as he stored his crop in the potato warehouse. New Brunswick potatoes were afflicted with powdery scab. If that terrible distemper should be contracted by the great American tuber, the potato field would become a desert, and even the Colorado beetle would be threatened with extinction. The great American nation realized its danger, and an embargo was at once placed upon potatoes from New Brunswick. The Cincinnatus of Aroostook and his brethren returned to their potato warehouses, and boosted the price fifty cents per barrel. They also winked at each other with that degree of solemnity which becomes a righteous farmer-folk, and pictured to themselves the dismay upon the countenances of the men across the border, when they saw long trains of Aroostook potatoes hauled by the Canadian Pacific Railway across a corner of New Brunswick, en route to the markets from which their own had been excluded.

But where, in this exigency, were the defenders of the far-famed potato of New Brunswick—so welcome on the tables of Canucks from Montreal to Winnipeg and Calgary? As a matter of fact they were executing a flank movement, which brought a rude check and almost complete disaster to the embattled farmers of Aroostook. By a swift movement on Washington they succeeded in getting before the agricultural experts of the war department samples of potatoes from Aroostook, which had more powdery scab to the square inch than those experts had ever dreamed of as endangering the vitality and virility of the greatest nation on the face of the earth. Also an unexpected ally turned up in New Jersey. He also was an expert. He boldly invaded the State of Maine, to tell the Aroostook potato-growers that as a result of the receipt of diseased seed potatoes from Maine the Jersey farmers were now buying seed elsewhere, and would do more of it if the Maine shippers did not mend their ways. And powdery scab was only one of several counts in the indictment.

As a result of this counter-attack an embargo on Maine potatoes was imminent, and worse disaster faced the Aroostook farmers than they had inflicted upon their neighbors over the border, who still had an excellent market in Quebec, Ontario, and the West. The reserves of the State Agricultural Board were hastily called out, and an inspection of all the potatoes in Aroostook was ordered, every diseased tuber to be taken out, every carload for shipment to be inspected when loaded on the cars, and every car sealed with a seal; and not a car to be hauled by the railways until the seal had been placed thereon. Also the reputation of the Maine potato has been badly damaged.

The war is over, but when the Aroostook warrior reviews the affair and counts the cost, his earlier disposition to wink at his own shrewdness is modified by the sad reflction that, "The consarned Bluenose has some gumption after all."

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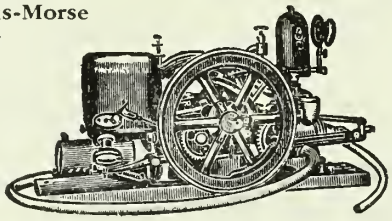

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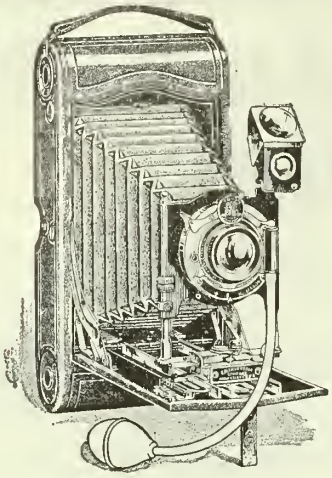

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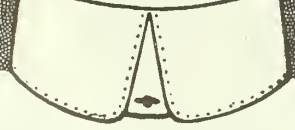

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By GRASMERE

Our good friend, W. D. Albright, writing from Grand Prairie says:

Is there a more delightful month than October? As the last stooks disappear from the grain field and the plow blackens the stubble; as the wild ducks fly across the marshes and plump prairie chicken feast in flocks upon the stacks and shocks or garner the waste kernels from stubble or threshing "sets"; as gophers mound the field with earth dug from their burrows and the settler busies himself with winter preparations garnering potatoes and vegetables, re-mudding the crevices of his log stables, banking up the house and rushing the plowing with all possible speed, racing against Jack Frost, when mosquitoes have received their quietus and warm days follow crisp, "nippy" nights, one feels anew the exhilaration of the plains. Winter is coming but winter brings few terrors for the settler who is well prepared.

* * *

Proper preparation for winter implies also preparation for next spring. One of the best ways of preparing for spring in the Peace River climate, and I think in other parts of the West as well, is to have at least a portion of the land ready to slap the drill on in the spring. With a single-disk drill land may be sown and harrowed before it would be quite fit for disking up in the ordinary way. Thus we gain time and with the wheat crop, especially in our short seasons, time should be stretched to the limit. I like to have the wheat land plowed, disked and harrowed in the fall ready to drill the first thing in spring. The best crops in our neighborhood this year (with the possible exception of my own) are on the farm of an experienced settler who was fortunate above his neighbors in having the bulk of his land at least fall-plowed, and was thus in a position to rush seeding operations with all possible despatch this spring. Prepare now for next year's cropping, insure good crops and reduce the rush of spring work.

OPEN WATERCOURSES.

Attention should be paid during the latter half of the month on most farms to the cleaning out and opening up of watercourses so as to allow surplus water an easy way off in the spring. House and barn eaves and drain pipes should all be gone over systematically.

WATCH THE SUMMER FALLOW.

Prairie farmers especially, should make a good inspection of the summer fallow this month for the appearance of any patches of noxious weeds. A little attention now will mean a great deal in next year's crop.

DIGGING POTATOES.

All potatoes should be dug early this month. No matter if the weather be fine. the chances of frost are too many to take any risks. Many prairie farmers have

had their whole crops frozen many times during October. Potato diggers are used in all commercial growing centres and many private farmers now own one. It is a good scheme for half a dozen neighbors to own one co-operatively where there is no great acreage of potatoes. Rowing out the potatoes entails considerable work and also is liable to cut the tubers a great deal.

WITH THE POULTRY.

Too many farmers neglect their poultry houses during the summer's rush of busy work. As a result these places are overrun with vermin and are fouled with the accumulations of droppings. It is necessary now to make a thorough cleaning out this month. First clean out all bedding, manure and foreign matter of any kind. Then sweep the walls, ceilings and partitions clean. It is well then to close up the place and burn sulphur till all insect life is destroyed. Next spray the interior with kerosene. Now whitewash the whole with fresh lime to which some crude carbolic has been added. Cleanliness is the only salvation in poultry matters. If possible put fresh straw in the loft to act as ventilator and moisture preventive.

The moulting hens should be well fed with wheat, oats and other grains. A little corn will be good. Keep plenty of oyster shell, grit and bone meal on hand. Where possible consider the advantage of the several feeds put up by the poultry specialists. Good prices will likely prevail for eggs this winter.

All cockerels should be penned for the market now. Put the pullets in a pen by themselves and feed for eggs. You will readily note that pullets require a little different feed than mature hens.

Ducks and geese can be prepared for the market at any time now by a fortnight's feeding of corn and wheat with plenty of fresh water. Watch the Jewish holidays for good prices near the big cities. If you have read FARMER'S MAGAZINE regularly you will have made a clipping from a recent issue of these holidays.

Turkeys will be ready for Thanksgiving and if it is not possible for them to be gotten off so early, they can be run along cheaply on the stubble until the November market which is often good.

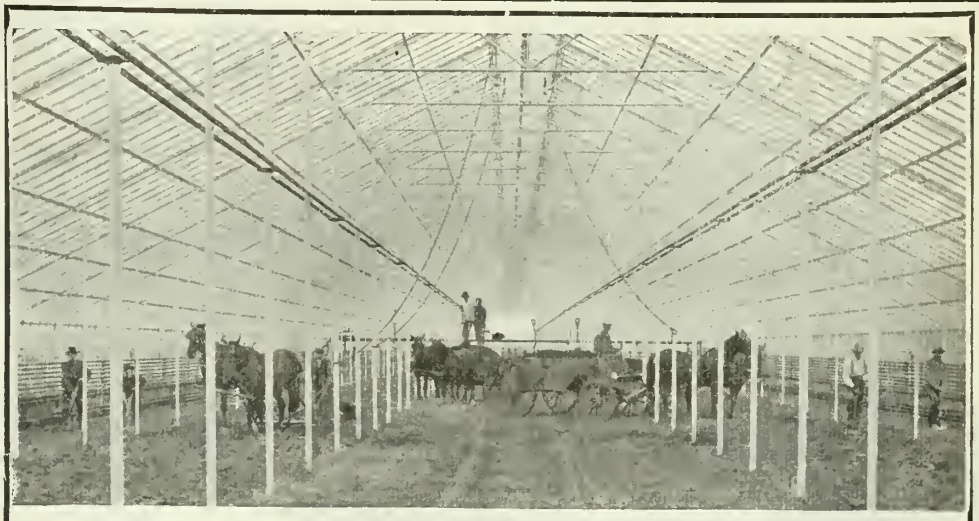
FOR SPRING EGG ORDERS.

Pure-bred breeders will be preparing in advance their best pens for mating early in the season. Selection of the hardy stock should be made soon. Do not be tempted by a good price to dispose of your best birds.

TAKE CARE OF THE ROOTS.

Mangels will be gathered this month in most parts of Canada. In harvesting the roots it is just as well to take a little care not to bruise them too much and not to put into the pits any that are likely to rot soon. Sugar beets also stand a great deal of frost, but it is well to get them out of the way as soon as possible.

Turnips will need all the month in Eastern and Pacific Canada for growth as the dry season has not produced big



Make Money Winters
Growing Greenhouse Vegetables

DID it ever occur to you that the same men who work for you outside in the Summer could just as well work inside Winters, if you had a greenhouse? Have you ever thought of it as a solution of your labor problem? Isn't it so, that a man who is reasonably sure he has a job *the year around*, works better and becomes a more valuable man each year? Isn't "the short job man" the one you have the most trouble with? If you have a thousand or so dollars to invest, why don't you try your hand at raising greenhouse lettuce, tomatoes and cucumbers? Start with a small house and work up into something bigger. You may find it pays better than farming. It's worth looking into. We would be glad to answer your questions and give you an approximate cost on a vegetable house. We have been building greenhouses for over half a century, and it stands to reason that we know how best to build them.

Lord & Burnham Co.

Limited, of Canada

Greenhouse Designers and Manufacturers

TORONTO, 12 QUEEN ST. EAST

New York, N.Y. Boston, Mass. Philadelphia, Pa. Chicago, Ill. Rochester, N. Y. Cleveland, Ohio

The Scale That's Guaranteed for Twenty Years Against Wear or Breakage.

WILSON SCALES stand every test for service and reliability.

The Grand Trunk Railway has been using them for sixty-two years, and they weigh as accurately to-day as when purchased.

Our No. 66 has a weighing capacity of 2000 lbs. Has Patent Drop Lever, Brass Beam, Heavy Wheels, Strong High Pillar Brace and 16 Full-Jeweled Diamond Steel Bearings.

EVERY WILSON SCALE is tested by Dominion Government. Easy terms to pay is the WILSON way. Freight paid to your station.

Our Booklet "W" contains some valuable scale information. It's worth sending for. Write to-day

C. WILSON & SON

60 Esplanade St. E., Toronto, Canada

No. 66. 2000 lbs. Capacity. Our Leader.

For Quality and Satisfaction

in axe construction you cannot beat "ALLAN HILLS." Made of English tempered steel, which retains its keen, lasting edge. The cutting edges give a lasting service and are made to withstand the hardest usage. When buying tools of any description ask for "ALLAN HILLS BRAND" and insist on getting it.

"MADE IN CANADA"

We also manufacture Picks, Edge Tools, Chisels, Mattocks, Hammers and Lumbering Tools of every description.

SEND US A POSTAL TO-DAY FOR
OUR HANDY REFERENCE BOOKLET

Allan Hills Edge Tool Company, Limited

GALT, ONTARIO

SYNOPSIS OF CANADIAN NORTH-WEST LAND REGULATIONS

THE sole head of a family, or any male over 18 years old, may homestead a quarter-section of available Dominion land in Manitoba, Saskatchewan or Alberta. Applicant must appear in person at the Dominion Lands Agency or Sub-Agency for the District. Entry by proxy may be made at any Dominion Lands Agency (but not Sub-Agency) on certain conditions.

Duties—Six months' residence upon and cultivation of the land in each of three years. A homesteader may live within nine miles of his homestead on a farm of at least 80 acres, on certain conditions. A habitable house is required except where residence is performed in the vicinity.

In certain districts a homesteader in good standing may pre-empt a quarter-section alongside his homestead. Price $3.00 per acre.

Duties—Six months' residence in each of three years after earning homestead patent; also 50 acres extra cultivation. Pre-emption patent may be obtained as soon as homestead patent, on certain conditions.

A settler who has exhausted his homestead right may take a purchased homestead in certain districts. Price $3.00 per acre. Duties—Must reside six months in each of three years, cultivate 50 acres and erect a house worth $300.

The area of cultivation is subject to reduction in case of rough, scrubby or stony land. Live stock may be substituted for cultivation under certain conditions.

W. W. CORY, C.M.G.,
Deputy of the Minister of the Interior.

N.B.—Unauthorized publication of this advertisement will not be paid for.—64388.

roots. Leave them in Ontario and the East till the first week of November. On the prairies turnips should be in in October.

WITH THE HORSES.

Farmers generally will find little trouble with their work horses this month. Beyond some disturbances to digestion by the change to dry feeds which can be watched carefully, and scalded shoulders in the heavy teams, there is little to watch.

Above all insist on your men using every precaution in feeding and care. A ripping, swearing teamster is an abomination and a man who does not love horses should never be employed on the farm. When constant fear characterizes the work horses, there is something wrong. The horse is a good faithful servant and is often less blameworthy than the incompetent driver.

Colts should be brought in to the shelter at nights at the close of the month when the bad weather begins.

MONEY FROM HOGS.

Hogs are making their feeders good money in all parts of Canada. It is no uncommon sight now to see a drove of black or white, sleek, fat ones on prairie farms. They scout around the wheat stacks and stubbles and get fat and good-natured with little extra looking after. A special pig pen can be easily constructed of ordinary woven fence wire and if it is carried over the top and supported with posts, the straw stack can be thrown over it and the hogs will have a cheap winter's pen. Brood sows do best running outdoors around the stacks provided they are not worried by cattle. They require little besides two or three ears of corn, a mangel and good water at a feed.

Keep a box of salt, charcoal and sulphur mixed where they can reach it. Spray all fattening hogs for vermin. Keep the pens scrupulously clean and use lots of straw.

Have farrowing pens fixed up so as to prevent losses,

SHEEP ARE GOOD PROPERTY.

The demand for breeding sheep is likely to be good this winter. The prairies are eager for them. Eastern farmers recognize their worth, and nothing should induce a man to clean out all his flocks, except total inability to keep them. Keep the ewes on fair pasture. Put the lambs on good feed. Before mating, flush the ewes on good pasture for ten days or feed roots and oats if good pasture cannot be had. This will insure better and more lambs in next year's crops.

IN THE GARDEN.

Plant daffodils, tulips, crocus and all spring-blooming bulbs now.

After the frost kills the dahlia tops, leave the roots in the ground for about ten days, then on a mild day, dig them up with plenty of earth around them, and let this dry out in the sun and wind. Then put them away in the cellar, banked up and completely covered with dry earth. The earth will absorb any excess of

moisture, preventing mold, and will also keep the roots from shriveling or decaying as they are likely to do when put away in boxes.

Keep dead flower heads picked off and collect seeds daily from the plants you wish to propagate.

Plant peonies now.

Do not relax the vigilant watch for weeds. Carelessness now may undo all a summer's care. One weed gone to seed is a catastrophe.

Get protective litter in readiness to be spread at short notice if nightfall brings promise of a freeze.

Grapes are purpling. Do not cut away the leaves on the vines to expose the bunches. The action of the sun on the leaf is what is necessary to make the sweetest fruit.

Go over the fruit trees for signs of disease, and pull out and burn anything seriously affected—root and branch. Send specimen branches to your provincial agricultural department.

This is a good time to do whitewashing, generally out of doors! Nothing surpasses a good coat of this as a purifier.

IN THE HOUSE.

The semi-annual cleaning season is here again. It will save time to have a good supply of cloths, brushes and cleaning materials ready before the work begins.

Highly polished wood may be cleaned with furniture polish made by taking 8 oz. unboiled linseed oil, ½ pt. vinegar, ½ oz. wood alcohol, ½ oz. butter of antimony, ½ oz. muriatic acid, putting these together in a bottle and shaking until thoroughly mixed.

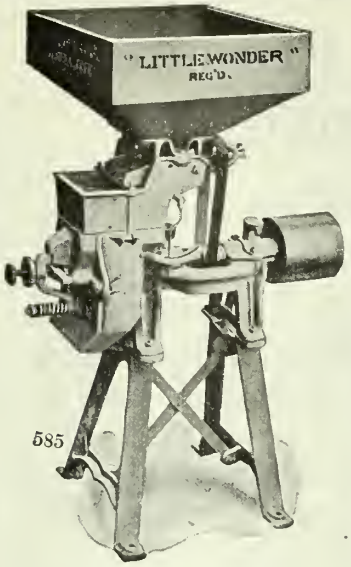
White stains from dampness come off easily if rubbed first with alcohol, then with linseed oil.

If an oiled floor has become dark, it can be whitened by mopping over with a weak lye solution. Let the solution lie on the floor for about ten minutes then wash up adding half a cup of vinegar to each pail of water. The purpose of the vinegar is to neutralize the lye so the floor will not be burned yellow. This will leave it beautifully white and it can then be re-oiled.

It will pay to go over your linoleum with a preservative like lin-o-shine, put on and let dry over night. A coat of varnish applied to grained wood once a year will also save the cost of repainting for a long time.

In cleaning windows, instead of washing with soap and water and using unnecessary energy to polish the glass, make a paste by wetting whiting with ammonia or alcohol. It dries almost immediately and can be polished with very little work. Kerosene is a good cleaner for cold weather, but avoid touching the woodwork. It takes off paint.

There is one place where a man's character is known and that is in his home. He may deceive the world, but he cannot deceive the wife of his bosom or the children who bear his name.



A Really Great Line---
Famous "Rapid Easy" Grinders.

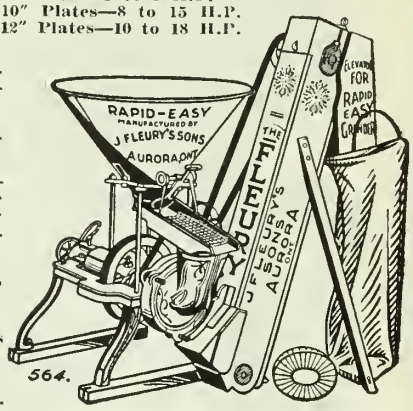
A size to suit YOUR power—small or large—and doing MORE WORK with same power than others.

"BUSY-BEE"—for your 1 to 2½ H. P. Engine
"LITTLE WONDER"—for your 3 to 5 H.P. Engine

"RAPID-EASY" No. "A"—6" Plates—4 to 6 H.P.
"RAPID-EASY" No. 1—8" Plates—5 to 8 H.P.
"RAPID-EASY" No. 2—10" Plates—8 to 15 H.P.
"RAPID-EASY" No. 2A—12" Plates—10 to 18 H.P.

And still heavier Grinders for Threshermen — Nos. 3, 3A, 4, 5; For Custom Mills, Nos. 6, 11 inch; No. 7, 13 inch and 13, 16 and 18 inch "Attrition" Grinders.

Ask for catalogue or circulars. Tell us the power you use and we will advise best machine.



J. FLEURY'S SONS - Aurora, Ont.

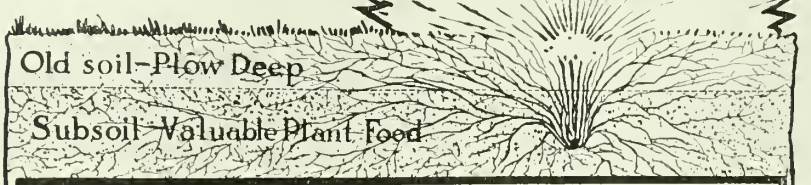
Medals and Diplomas World's Fairs, Chicago and Paris.

Sold by The John Deere Plow Co. of Welland, Ltd., 77 Jarvis Street, Toronto, Ont.

Western Agents, JOHN DEERE PLOW CO., Limited.
Winnipeg, Regina, Saskatoon, Calgary, Edmonton, Lethbridge.

When the "top soil" wears out

Open up the rich subsoil with CXL



It's only the upper soil that you use.

Below is rich subsoil as full now of plant food as when the land was first cultivated.

And you can obtain this valuable plant food—you can restore the original fertility of your soil quickly, surely and with little labor.

We will instruct you in the use of CXL Stumping Powder, and show you dozens of ways to add to your farm's productiveness.

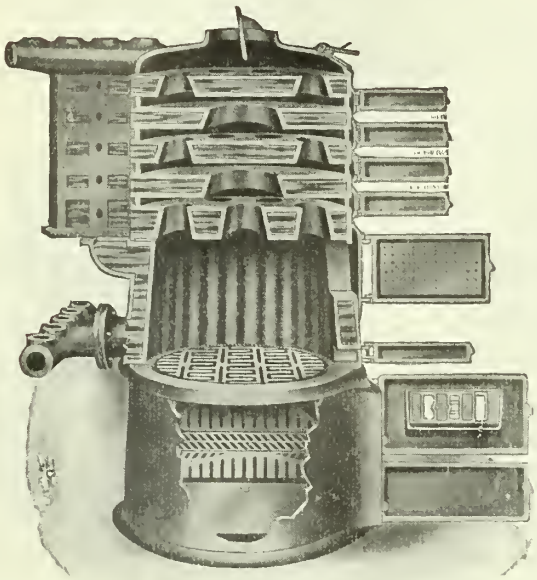
No more dangerous than gun powder. There's a CXL explosive for every blasting purpose.

Send for free booklet 'Farming with Dynamite'. Shows how to get the most out of your farm.

CANADIAN EXPLOSIVES LIMITED
Montreal—Victoria

CANADIAN EXPLOSIVES TRADE CXL MARK LIMITED

The "SOVEREIGN" Promotes Better Fuel Economy



"Cutting down the coal bill" usually means making a sacrifice of winter comfort for the sake of saving two or three tons of fuel on a possible consumption of ten to twelve tons.

Saving coal with the "Sovereign" Hot Water Boiler means real economy.

The "Sovereign" promotes fuel economy. It does not require to be watched in order to save coal.

The "Sovereign" will turn every shovelful of fuel put into the firepot into the maximum amount of heat, and if you try to use too much coal in the "Sovereign" you should ordinarily have too much heat.

That is how the "Sovereign" saves coal. It draws all the heat out of all the fuel put into the firebox.

Write for the "Sovereign" Bulletin, a quick-to-the-point argument, that shows, almost at a glance, the exclusive features of the "Sovereign," which increase its heating efficiency and promote fuel economy. Send a post card to our nearest address and mention "Farmer's Magazine."

"WESTERN JR." BOILERS

TAYLOR-FORBES COMPANY, LIMITED

"SOVEREIGN" RADIATORS

Toronto—1088 King Street West.
Montreal—246 Craig St. West.
Vancouver—1070 Homer Street.
Winnipeg—Vulcan Iron Works.
Calgary—P. D. McLaren, Ltd., 622 Ninth Ave.
St. John, N.B.—W. H. Campbell, 16 Water St.
Quebec, Que.—Mechanic's Supply Co.
Hamilton, Ont.—W. W. Taylor, 17 Stanley St.

Head Office and Foundries, Guelph, Canada

Talking to the Point—

Classified want ads. get right down to the point at issue. If you want something, say so in a few well-chosen words. Readers like that sort of straight-from-the-shoulder-talk, and that is the reason why condensed ads. are so productive of the best kind of results.

Classified want ads. are always noticed. They are read by wide-awake, intelligent dealers, who are on the lookout for favorable opportunities to fill their requirements.

TRY A CONDENSED AD. IN THIS PAPER.

HANDLING SILAGE.

The work of taking care of the corn crop in the silo, brings forward every year to the Canadian farmer, the rush and cost of the operation. The careful farmer is always at work to find ways and means to lessen the expenditures of labor and money.

There are three ways of hadling the corn. One is by the big outfit whose sole business is to do this work for the whole vicinity and another is the outfit owned jointly by two or three farmers. The last method is by the individual outfit. All three are known to Canadian farmers. Whichever way is employed, there are some maxims that ought to be observed.

The best time to cut corn is when the ears are denting and glazing.

Semi-dry or frosted corn should always be dampened when entering the silo. Ordinarily it requires from one to three tons of water for each ton of such corn. It is better to get too much water than not enough.

When the silo is being filled, at least two men should be used to tramp in the silo. Keep the outside the highest and tramp it the most.

Two men in the field will hand up corn to one man on the wagon more economically than either one or three. If a man is careless with his loading he will require twice the time to unload than it will require if the corn is placed on the wagon in regular order.

SHRINKAGE IN GRAIN.

In handling grain the question of an increase or decrease in weight after threshing is often before the farmer and the dealer. Many farmers believe that there is a decided loss during storage, and are willing to sell at a lower price at harvest time than later, even though storage costs them nothing. To secure information along this line, an experiment has been conducted at the Utah Agricultural College Experiment Station. While the results obtained may not hold good for all conditions, they can be used as an indication of what will probably take place under conditions somewhat similar.

Wheat and oats were used in the experiment. They were taken directly from the threshing machine and placed in sacks, holding a little over two bushels. The bags of grain were stored in the college barn, on a platform, around which air could circulate freely. The experiment was begun on August 17, 1911, and continued for two years. The bags were weighed once a month and the same scales were used throughout. Contrary to expectations, there was a gain in weight instead of a loss. A gradual increase in weight occurred during the fall and winter until a gain of from three to five per cent. had been made. A decrease in weight, never amounting to more than two per cent., commenced in spring and continued into the autumn, when the weight began to increase again. During the second winter the grain was even heavier than during the first, while in the second spring there was a falling off again, as in the previous year.

The Mobilization of Farm Products

Continued from page 12.

that it is the part of patriotism, aside from the question of profit which will take care of itself, to do his part in this connection."

THE APPLE SITUATION.

D. Johnson, Fruit Commissioner, Ottawa.

That the European war has seriously affected the fruit business is clearly shown in the marketing of the plum crop, which was light, not more than 25 per cent. of last year, yet it was as hard to sell and at prices no higher than last season. The peach crop was not more than 10 per cent. of last year yet there seems to be quite enough to supply the demand. Crab apples are the same, thousands of baskets throughout Canada will never be picked.

The apple market is very slow and I fear that thousands of barrels of this fruit will rot on the ground. We have a crop almost as big as 1912 and of very fine quality, but the European market is largely cut off and as the boats from Montreal are likely to be engaged for transporting the Canadian soldiers to Europe during the month of September it means that there will be but a poor chance to ship by that port. A few cars, however, found their way from Halifax and New York, and have sold from fourteen to eighteen shillings per barrel, which is a very good price for early fall apples. The Western market is fair, especially in Manitoba, and fruit growers and shippers who have their connection there will no doubt do much better than those who have been depending on the apple buyer.

The year 1914 will, I believe, pass into history as an association year, and will prove to the public that the efforts put forth by the Government to assist these organizations was energy well spent. Many of these associations have sold their apples at an average of $2.25 per barrel, 75 per cent. No. 1. A good many cars have been sold to retail dealers in the West at $2.50 per barrel for No. 1. B.C. apple crop is large and of fine quality and is selling $1 per box for No. 1, and 75c for No. 2, f.o.b. shipping point.

The evaporated apple market is absolutely dead. Germany consumes 75 per cent. of the evaporated apples made in Canada. This year on account of the war they have not taken a car. Western Canada is buying a few cars, but as the highest price they offer is 6c per pound f.o.b. shipping point, there is little or no encouragement for manufacturers to open their plants.

CULTIVATE BETTER.

Prof. M. Cummings, B.S.A., Secretary of Agriculture, Nova Scotia.

"Prepare all the land you can this fall and so be ready to grow more and bigger crops next summer. Thus you will serve the Empire and at the same time improve your own farm. Keep the plow at it."

Special Cut Price

Direct from Factory

ON

Three Hundred Barns

To Introduce Sarnia Better Buildings To Canadian Farmers

We offer to sell SARNIA BETTER BUILDING MATERIALS at a tremendous sacrifice to the first three hundred farmers who will help us introduce our Products in each district in Canada.

In making the announcement that our Company will market its entire line of Corrugated Iron, Metal Shingles, Siding, Culverts, Eavestroughs, Conductor Pipe, etc., direct from factory to you, we have taken a long step. Believing that when you, as a farmer, realize the economy of purchasing these products direct, you will at once do all in your power to assist us.

The large farm organizations in Canada have advised us that they will stand behind us and help us wherever possible to introduce our direct-from-factory policy. We have every reason to believe that you as a farmer residing in the Dominion of Canada, will stand behind us and see that we succeed in our opening campaign in Canada. Should you contemplate building a new barn, or putting on a new roof, either this fall or next spring, show your appreciation of our direct-from-factory policy and write us to-day. We can save you from fifty to one hundred dollars if you act now. Remember, we are giving this special price to 300 persons only, as an advertisement of *Sarnia Better Buildings,* and you must act at once.

We manufacture a full line of SARNIA BETTER BUILDING Materials, including Plain aud Galvanized Iron, Corrugated Iron, V-Crimped Roofing, Brick Siding, Galvanized Culverts, Rock-Face Siding.

Our Absolute Guarantee of Sarnia Metal Roofs

We guarantee that the galvanized iron used in the manufacture of Sarnia Metal Products to be equal to that of any iron used by any manufacturer in Canada, in the manufacture of similar lines of roofing products, that are selling to the farmer at the time of this advertisement, at an advance of 25% to 50% above the price we will quote you.

Please forward us immediately a rough sketch of any roof you may be contemplating putting on this fall, or a sketch of any building you may be erecting this fall or in the spring, and we will send you at once a full estimate on the cost of Sarnia Better Building Materials, direct freight paid to your station.

The Sarnia Metal Products Company, Limited

HEAD OFFICE AND FACTORY:

SARNIA - - - - CANADA

The FARM MOTHER'S PRAYER of THANKSGIVING

By Ethel M. Chapman

God of the Harvest, nothing but thanksgiving can go up to Thee, when we look at our bursting granaries, at the fields dotted with corn shocks, at the sun shining on heavy-fruited orchards, and teeming herds of cattle on the hillsides. We tilled and tended, but no drop of rain fell from our invention; no sun warmed the seed into growth at our will; no life sprang from our creation. The increase is Thy gift as was the manna in the wilderness when men had their food from day to day at Thy hand.

Nor for the harvest alone, but that it is given to live among fields and hills and forests, where every day teaches its silent lesson, and quickens the understanding to know life as it was meant to be. To see cattle on a hilltop silhouetted black against the sunrise; to watch the white vapor rising from ploughed fields when night closes in; to feel the spell of the moonlight filtering through the stripped branches of a haggard old elm; to interpret the calls of the vireo to his mate;—these are the things that fill the souls of men and women with a reverence for the beauty of life, that bring them a little closer to their Creator and give the days a perpetual newness. Surely the way has fallen for us in pleasant places.

And Father, Thou knowest, a mother's prayers are mostly for her children. More each year we thank Thee for the open spaces that give them pure air to breathe, the fields for the playground, the green sod for their bare-feet; for the birds and bees and plants that taught them their first lessons of Nature in its uncovered loveliness; for the unfettered playtime that started them in life with sound bodies and undisturbed minds.

Later, when our boys became men, the same fields and plants and animal life gave them a profession worthy to be any man's life-work,—a calling fitted to make men virile. The long strain on the muscle holding the plough, the struggle with blight and drought, the care of the cattle, the daily exposure to the weather, trained them to quick resourcefulness and iron endurance. It means contact with soil, and stock and machinery, but it is clean work that breeds clean manhood,—a business without one principle for the exploiting of humanity.

And for our daughters, we praise Thee that they can grow up where womanhood is reverenced, and where conventions have not made of woman a parasite, a plaything. Every day has its productive labor, necessary tasks to promote her husband's business and to preserve the comfort and well-being of the family. We have heard it called menial, this work of the woman on the farm. People who mean well, but understand nothing of its inwardness, look with pity on our "drudgery," our "backwardness," our "need for enlightenment." Others, who know where the burdens actually rest, have brought real help from the world of science and invention, from great minds that have given their lives to working for better homes and bigger womanhood. We have never despised these. None of Thy people have ever reached out more eagerly for the knowledge that will make life nobler and sweeter for their families,—not for the new things because they are new, but for the education to apply in modern living the old, true, natural laws that have been since the world was. To understand the human body, that we may know how to safeguard its health; to know best how to create beauty in our homes; to have some of the chemists' and physicians' knowledge in feeding our families,—we appreciate these things and we want more of them,—but in the meantime we thank Thee for the real joy of the work itself. To turn out a baking of brown loaves, to get a washing of white clothes on the line, to plant and tend a garden, we know, are accomplishments as great as to make a masterpiece of a picture or a poem.

The woman question, the campaign for "equal rights,"—we have not time to enter. Perhaps it is as well. The day when women will have the greatest influence may come just as quickly, if instead of saying to men "Give me that, I can do it as well as you can," we ask "What is the thing I can do that will help most? What part is it that you can do best, and what can I, and what part must we work out together?"

Especially, Father, we ask Thy blessing to be with those women who have pioneered with their men in the forest and on the prairie. The kindliness of heart, the quick sympathy, the capacity for universal motherhood, born of the travail in the wilderness, have made the whole world richer.

And then we thank Thee that a simple life has taught us to find our joys in simple things. We know that real joy is not found with the crowds, in chasing after pleasure, or apart from the austerities of life. When we learn to find it in the everyday things, we are not troubled with monotony or discontent. Even age holds no dread; it just means a ripening, a broader outlook, a clearer vision. Only just now it is hard to see clearly, thinking of other mothers whose sons are being spent and wounded and slaughtered. The flower of the country's manhood they may be, and each one, every inch a soldier, but to his mother he will still be the little child who needs her. Our special petition is that Thou wilt be gracious to the prayers of mothers the world over, at this Thanksgiving.—Amen.

Farmers in War and Peace

Continued from page 9.

There is another factor in Canadian live stock feeding this winter to be looked at. So many farmers are going in for grain that the absence of herds from the usual feeding sheds will likely mean bigger prices next spring for cattle. There is no fear that those farmers who go in for a full stableful will lose out in their expectations. J. E. Poole, writing in the *Breeders' Gazette*, says regarding the meat scarcity that 1915 will see it more acute than ever. He says in speaking of the U. S. feed lots, that July and August are the months when cattle are laid in for fall and early winter feeding, consequently purchasing at the central markets during that period affords an interesting comparison.

This shows a big falling off in winter feeding. Canadian distillery feeders on the contrary are grabbing everything at sight at prices about $1.50 per cwt. higher than a year ago. This celebrated authority concludes by saying that "winter markets may be so bare, that the fleshing process will be highly profitable."

Farm Horses Best War Horses

Continued from page 10.

Agriculture, Dr. McEachran, Dominion Veterinary Inspector, includes an account of the Canadian horses sent to South Africa with the various contingents, as well as by special shipments. In all 5,138 were shipped, of which 1,353 went with the contingents, and 3,785 were purchased by Major H. Dent, remount officer for Canada. The latter, in a letter to Lord Strathcona, thus describes them:

"About 15 to 15.2 hands high, a few are about 14.3 Ninety-five per cent. are thoroughly broken to cowboy work, taught to rein in by the neck, stop suddenly, turn on the hind feet as a pivot, stand on the prairie with the reins over their heads, ford and swim rivers, and go at a rapid pace up and down hills. They are stout animals, with good short backs and strong quarters, good bone, and active as cats; horses which know nothing of stables or grooming, accustomed to be ridden half a day or more, and at night simply stripped of saddle and bridle and turned loose to find their food.'

Extracts from letters from Colonel Steele, dated Paardekop, August 6, 1900, bear witness to their excellence for the service required of them. He says:

"I wish to assure you that the horses are the best in this army. Two squadrons had the 450 spared, and they had to do all the hard scouting and advance guard work, while "C" squadron, with the Argentines, had to be spared for a long time.

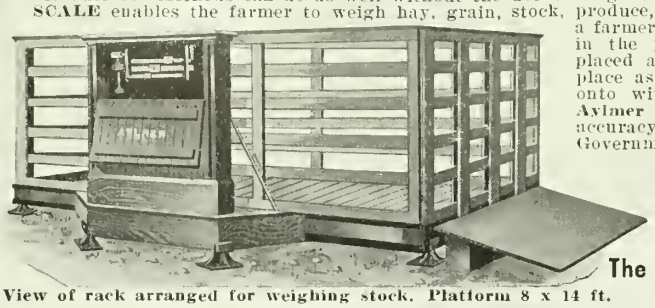
The Farmer who owns a good scale

has many decided advantages for doing business

His knowledge of the exact weight enables him to make quick sales that would otherwise be lost. By keeplug tab ou the weight of his cattle, he saves on feed—knows exactly what auimal is gaining or losing weight.

He Gets Better Prices for His Cattle and Hogs

His exact knowledge saves him from the mercy of the buyer. No farmer who prides himself on his business methods can do as well without the use of a good scale. **THE AYLMER PITLESS SCALE** enables the farmer to weigh hay, grain, stock, produce, and a dozen oue things that a farmer is buying and selling every month in the year. The **Aylmer Scale** can be placed anywhere, or moved from place to place as required. Always ready to drive onto without injury to mechanism. The **Aylmer Scale** gives absolute assurance of accuracy. Approved and passed by a Government inspector.



View of rack arranged for weighing stock. Platform 8 x 14 ft.

Why not investigate the advantages that the ownership of an Aylmer Scale will give you? Full particulars and prices on request.

The Aylmer Pump & Scale Co., Ltd.
AYLMER, ONTARIO

LAND TILE

3 inch, 4 inch, 5 inch, 6 inch, 8 inch, 10 inch and 12 inch.

We manufacture, and carry in stock, the best land tile in the above sizes. You know the many advantages of having your farm well drained.

Write and get one of our booklets on farm drainage.

The Dominion Sewer Pipe Company

LIMITED

SWANSEA ONTARIO

Ontario Demonstration Car

The car exhibiting grains, roots, cereals and the other products of the Great Northland of Ontario, with a better display than ever, is now touring through the Province. Following is the itinerary:—

Car will leave Englehart October 1st, and will be at stations following on dates opposite.

Englehart	Oct. 1st	Burketon Jct.	Oct. 30th	Hagersville	Nov. 28th
North Bay	Oct. 2nd	Claremont	Oct. 31st	Hamilton	Nov. 29th
Mattawa	Oct. 3rd	Toronto	Nov. 1st	Hamilton	Nov. 30th
Pembroke	Oct. 4th	Toronto	Nov. 2nd	Hamilton	Dec. 1st
Pembroke	Oct. 5th	Toronto	Nov. 3rd	Milton	Dec. 2nd
Cobden	Oct. 6th	Brampton	Nov. 4th	Palgrave	Dec. 3rd
Renfrew	Oct. 7th	Georgetown	Nov. 5th	Tottenham	Dec. 4th
Sand Point	Oct. 8th	Rockwood	Nov. 6th	Beeton	Dec. 5th
Arnprior	Oct. 9th	Guelph	Nov. 7th	Cookstown	Dec. 6th
Pakenham	Oct. 10th	Guelph	Nov. 8th	Cookstown	Dec. 7th
Almonte	Oct. 11th	Breslau	Nov. 9th	Thornton	Dec. 8th
Almonte	Oct. 12th	Berlin	Nov. 10th	Allandale	Dec. 9th
Carleton	Oct. 13th	New Hamburg	Nov. 11th	Barrie	Dec. 10th
Stittsville	Oct. 14th	Stratford	Nov. 12th	Orillia	Dec. 11th
Ottawa	Oct. 15th	St. Marys	Nov. 13th	Severn	Dec. 12th
Ottawa	Oct. 16th	Elsa Craig	Nov. 14th	Severn	Dec. 13th
Smiths Falls	Oct. 17th	Parkhill	Nov. 15th	Gravenhurst	Dec. 14th
Smiths Falls	Oct. 18th	Parkhill	Nov. 16th	Bracebridge	Dec. 15th
Perth	Oct. 19th	Thedford	Nov. 17th	Utterson	Dec. 16th
Maberly	Oct. 20th	Forest	Nov. 18th	Huntsville	Dec. 17th
Sharbot Lake	Oct. 21st	Sarnia	Nov. 19th	Scotia Jct.	Dec. 18th
Mt. Grove	Oct. 22nd	Sarnia	Nov. 20th	Burks Falls	Dec. 19th
Ardendale	Oct. 23rd	Petrolia	Nov. 21st	Burks Falls	Dec. 20th
Tweed	Oct. 24th	Petrolia	Nov. 22nd	Sundridge	Dec. 21st
Ivanhoe	Oct. 25th	Glencoe	Nov. 23rd	South River	Dec. 22nd
Ivanhoe	Oct. 26th	St. Thomas	Nov. 24th	Trout Creek	Dec. 23rd
Havelock	Oct. 27th	Aylmer	Nov. 25th	Home to Englehart	Dec. 24th
Peterboro	Oct. 28th	Tillsonburg	Nov. 26th		
Peterboro	Oct. 29th	Jarvis	Nov. 27th		

DO NOT FAIL TO SEE THIS GREAT EXHIBIT

PLOW IN LESS TIME

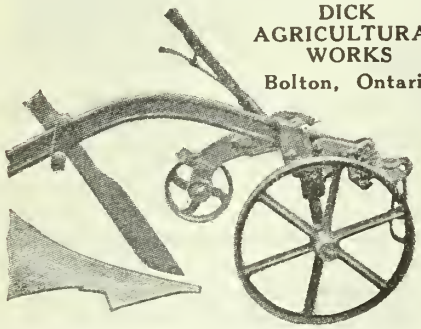
Use the Dick Lever Plow Wheels

The Dick lever attachment has several advantages not found in others, and will fit all plows.

1st.—You can change the depth of the furrow.
2nd—In finishing the last furrow you can throw the land wheel up over the plowed land.
3rd—The land wheel is opposite the point of the share, thus allowing the point to go down and take up low places.
4th—The wheels are easily adjusted to the width of the furrow.
5th—Any boy who can drive horses can do as good work as the best plowman.
6th—The plow will draw easier, as the wheels practically hold the plow in place.

Write for full particulars about this Famous Dick Lever Plow Wheel Attachment.

DICK AGRICULTURAL WORKS
Bolton, Ontario



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GET ONE AND PROVE IT

The Monarch No. 6 Patent Grinder with attached bagger is a wonderful improvement over the old-style grinder. Will grind a bag of grain fine in seven minutes, suitable for cornmeal or graham flour. For horses and cattle it grinds in five minutes. The bagger has no belts, sprockets, chains or cups to cause trouble. Costs no more than the ordinary machine.

Made in Canada

Write for circular "C" and testimonials from gratified users. Write to-day.

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The Investor's Primer

A Concise Handbook by John Moody, containing definitions of all the important terms and phrases employed in the investment and banking business. Part 1 covers the definitions of Finance. Part 2 gives specific information regarding various issues of Preferred and guaranteed stocks.

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143-153 University Avenue
TORONTO

We have lost very few Canadians, and have changed our other remounts several times. It is the opinion of officers and others who have looked at the horses that they are the best that have been imported into the country, and, outside of the native-bred pony, best fitted for the work."

Major Dent wrote to Dr. McEachran, and made an important suggestion:

"I was pleased altogether with the class of horses which were brought before me, but I think great improvement can be made by using the English thoroughbred stallion as a sire, and doing away with the American trotting sire, which, in my opinion, has done a great deal of harm to Canadian horses. I attribute the long back and weakness of back ribs and bones, also smallness of bones below the knee, to the American trotter. I wish to urge on the Canadian farmers and young men in Canada to take to riding instead of always driving. They would add greatly to their health and happiness by so doing, and enhance the value of their horses 50 per cent. It is difficult to find in the country districts a horse that has ever had a man on its back."

The Forty Million Acres of the Peace

Continued from page 16.

with poplar bluffs between which are many open stretches where the plow may keep its furrow for miles. Practically all the sections along this trail have been filed but back of this is a great extent of good land as yet but roughly estimated. The total area of good land in the Peace River region has been guessed at forty million acres. I have heard contrary opinions expressed as to whether the valley or the plateau were the safer from frost. Some parts of the plain are much safer than others. Speaking in general we may say that wheat sometimes ripens and will do so more regularly as the country becomes older and earlier varieties are introduced. Oats grow splendidly and often ripen. Barley and vegetables are comparatively sure. Potatoes yield splendidly and of excellent quality. The great security of the country, however, is stockraising and as a mixed-farming district we are safe in assuming that the agricultural future of the Peace River country is assured.

FORTY MILLION ACRES OF FARMS.

Truly the Peace is a great river—great in length, volume, depth of channel, and especially remarkable for tranquillity of current throughout its main trunk-length. Smooth as glass it appears from the heights above; yet crossing you are conscious of a strong current of perhaps five miles an hour at low water. The gradual decline of the country and the depth of the soil have enabled it to wear down its channel to near sea level clear back to the mountains. We say "near" sea level, for of course there is some fall—enough to give steady current without rapids. From Hudson's Hope to the mouth of the Mac-

DIRK'S RED MITE KILLER

One application KILLS all Mites and prevents their reappearance during the season. Keeps fowls free from body lice. Makes scaly legs bright and clean. Keeps lard, pastry and sweets free from ants. Bedbugs will give no trouble where used. Write to-day for special trial price. Booklet free.

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The Rayo Lamp mixes air and oil in just the right proportions, so that you get a clear, bright light without a trace of smell or smoke.

Rayo LAMPS

Rayo lamps are easy on the eyes—soft and steady—light up a whole room.

Made of solid brass, nickel plated—handsome, made to last. Easy to clean and rewick.

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ROYALITE OIL is best for all uses

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kenzie the only two interruptions to navigation are the Chutes of the Peace and the fall on Slave River below Fort Smith. Thirteen hundred feet is not much for a river system to drop in two thousand miles!

With black coal in lavish abundance to furnish light and power in winter and white coal to perform these services still more economically in summer; with timber easily available for lumber and fuel; with a Mississippi of navigable channel to be linked by early rail connection with East, South and West; with forty million acres of unexcelled mixed-farming country and a clear bracing sunshiny climate immune from tornado and almost immune from devastation by hail; and last but best of all with the unrivalled vanguard of well satisfied settlers pushing into the country, and claiming the new North for civilization, what can prevent the Peace River Region becoming great?

Making the Boy a Farmer

THE farm is the ideal place on which to teach your boy business methods. It is the one spot where a little capital will bring sure and reasonably quick returns. Give him a pig or a calf or a hen and her brood of chicks and let him understand that the gift is his own—that there are no strings tied to it. What he makes from it is his, what he loses is his loss.

Give him a piece of ground and help him to plan the crops. He may suggest some funny things at first, but be patient with him. Just remember the very many foolish mistakes you made when you began farming and that you have made many times since, successful farmer that you are.

Study with him, take him to farmers' meetings and corn contests and promise him a course at an agricultural college later on. There is so much for both of you to learn that you will be astonished at the things you do not know.

As the years go by, and he has developed as he should, you will find yourself considering giving him the choicest quarter section you own, or perhaps may conclude to give him the control of the whole farm while you take it easy.

Of course, it is possible that he may not be a natural farmer, and have dreams of a business or artistic career. What of it? Start him just the same, and when the time comes that you cannot hold him on the blessed old farm any longer, let him go and bid him Godspeed. He will be all the better for his home training, for the years spent outdoors with hill and wood and valley, and he will have a capital of his own earning to carry him through, whatever career may be his choice.

And just as the boy should have this opportunity, just so should the girl have the same chance. The time is coming when she, too, will need capital, and if she has earned it herself she will value it doubly. Let her have chickens, stock and garden and trust her for the rest.

CAST-IRON WATER-BOXES

For Stock Stables—The kind that last forever.

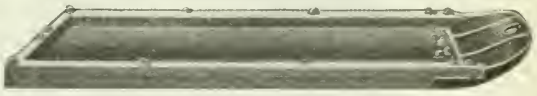
Made of the best grey iron, no rivets to rust out, a one-piece box, very heavy, drilled to your order.

Price $1.00 each, f.o.b. factory

Dimensions, 8½ ins. wide, 18¾ ins. long, 4¾ ins. deep.

CAST-IRON STONE-BOAT HEAD

A very simple, strong and durable device with which a boat for stone or other material can be made at small expense.



The boat finished.

Price of cast head, $2.50 at factory. Ask for prices, complete with wood frame like cut and all-steel frame.

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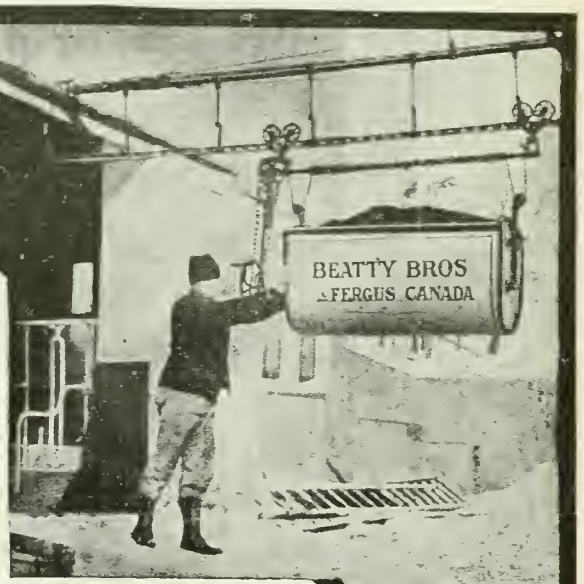
Save Half the Work in Your Barn



Mail the coupon now for free book that tells how. Read how to get manure out of your barn in a jiffy and no hard work. Learn how the boy can do the whole job now and not mind it, where strong men hated it before. Learn how the boy can run out half a ton of manure at a time—four big barrow loads—clean the whole stable with one big load. Get the proof, mail coupon now.

BT Manure Carrier

It makes money in a score of other ways, and pays for itself in a single winter. It saves all the valuable liquid manure because the bucket is carefully galvanized; no dripping along the passage way or in the yard. With the BT system of the overhead track it is easy to get the manure rods away from the barn, no matter how much snow or mud is in the yard. This keeps the manure from rotting the floors and sides of the barn, and helps to prevent Tuberculosis and other diseases among the cattle.

Get the BT Carrier now, and let it save time and labor for you all the fall and winter. Mail the Coupon. Get our book No. 22, telling all the advantages of the BT Carrier, Feed Carrier, Feed Trucks, etc. Also ask for book No. 21, about Steel Cow Stalls and Stanchions. Either or both sent free.

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View of Grounds and Lake, Canadian National Exhibition.

The Canadian National Exhibition

A Retrospection of the World's Greatest Fair—Despite the Handicap of Unsettled Conditions, due to the War, the Exhibition was as Great and Successful as Ever

Had the directors of Toronto's big exhibition been aware sooner of the conditions that have thrown nations of the old world into such disruption they would no doubt have given this year's exhibition a different appellation than "Peace Year," but despite what appeared a mocking misnomer, to Canadians, the blessings of one hundred years of peace which Canada has enjoyed were only more strongly emphasized by contrast with the conditions inflicted upon those countries under the throes of the ravaging system of militarism gone mad.

Canadian optimism and enterprise could not, however, be downed by the gloom of war, and in consequence the Canadian National Exhibition came through with flying colors and the splendid achievement of last year was in every respect maintained this year, except in the attendance.

It is particularly for the benefit of those who were unable to attend that the chief features and some of the useful attractions are described. For those who visited the exhibition there may be some things herewith detailed which escaped their notice as it is impossible in one day or even a week to take in anything but a smattering of the many things of interest, so attractively brought out and made accessible for the enlightenment of the public through the industrial and mechanical exhibits. It is a matter of congratulation that these exhibits are becoming the chief attractions as well as the most educative factor of this great Fair.

In Toronto's exhibition grounds this year there were epitomised the greatest productions of man's brain, not only in the industries, but in inventions even to the greatest of achievements of man's ingenuity—the aeroplane; in art and in oratory for at no other time has this Fair had such a notable gathering of Canadian men, mighty in a word as in deed. The produce from the soil showed a gratifying and marked advance in quality over last year's showing. The livestock department though less extensive than in previous years maintained, and in some cases surpassed in quality, any previous years' exhibits.

After even a casual glance over the various departments of soil industry and manufacture, the visitor could not feel anything but optimistic for Canada's future. Nor have Canadian manufacturers been slow to recognize their opportunities as was evidenced by the numbers of booths displaying Canadian manufactured products. These were of such a high standard in construction and workmanship that any fears of Canada's ability to meet the displacement of imported goods were quickly dispelled. Readers of MacLean's Magazine will find a double interest in reading over what the camera depicts and the pen portrays about these various industrial and technical exhibits from which so much knowledge and practical benefit can be gleaned.

Furthermore, the reader will be able to get in touch with these firms for further particulars regarding any of the articles exhibited in which he or she may be interested as a purchaser and by writing to the firms here mentioned will be able to buy just as if they paid a visit to the exhibit in person.

Connell-Ott Company

A NEW development in economical and dainty cookery was demonstrated by the Connell-Ott Company at the Exhibition this year. Under present conditions of the cost of living the housekeeper finds the prices of eggs for baking an item on her market bill to be considered seriously; yet if she is to have cakes, frostings or any of the dainty desserts it is impossible to get along without egg-white or egg albumen in some form. The Connell-Ott Company have solved this problem by manufacturing Snow Mellow, an egg substitute composed entirely of egg albumen and vegetable compounds, which, made up in cake fillings and icings had the attention of every woman passing the booth. The *Snow Mellow* preparations were so light, fluffy, and delicious, and the company's principle of good taste and cleanliness so well carried out in decorating the booth with lavender and white bunting and Union Jacks, that this was one of the most attractive exhibits shown.

The economy of using *Snow Mellow* is easily seen when we consider that one spoonful of the compound is equal to the whites of six eggs, a fact not at all incredible since eighty-five per cent. of an egg-white is water. One spoonful of the dry powder beaten up with one-third of a cup of luke-warm water will ice and fill a cake. It can be sweetened and flavored as desired, will brown in the oven just like an egg meringue, or if left uncooked will set and remain stiff for days. With each can of *Snow Mellow* the buyer received a book of recipes prepared by a teacher of domestic science, telling how to use it in place of whipped cream, to make candies, boiled icings, russes, creams and fruit whips, pie fillings, and a number of dainty and new desserts, with most pleasing results and trifling expense. If you cannot secure *Snow Mellow* from your dealer, mail us 25c for package containing enough fillings for five two-layer cakes or five family-size desserts. Connell-Ott Company, 401 Kent Building, Toronto.

THE Connell-Ott Company also had an excellent exhibit of Bass-Island Grape Juice on the grounds. The two types of non-alcoholic wine were shown, namely, the Catawba, which was so crystal clear and sparkling as to command the attention of every visitor, and the Dark Concord juice which is so rich, heavy and nutritious as to be really a food and medicine rather than a light beverage. Visitors were frequently heard to ask the reason for this difference, and the explanation was so direct as to show clearly the purity and tonic qualities of the products.

In the process of making either grape juice, the grapes are first run through a grinder. In making the Dark Concord, the grapes are ground juice and all, then run into a large kettle and heated, which extracts all the meaty substance and color from beneath the skin of the grape. This heated pumace, juice and all is then dumped into the press and squeezed out. In making the Catawba grape juice this heating process is eliminated, consequently when the unheated, ground grapes are pressed there is little color and meaty substance drawn from beneath the skin, and a light clear juice is the result. The process of pasteurizing is exactly the same in each case. It simply rests with the consumer whether he wants a light refreshing beverage or a rich nutritious food.

As a beverage to serve at social functions the Catawba grape juice cannot be too highly recommended. Its attractive appearance, and its high natural acidity make it even more popular for this purpose than the Dark Concord. The reason for the superior quality, the clear color and the delicate flavor is readily understood after seeing the Connell-Ott manufacturing plant. The majority of grape-juices are produced by running the juice from the press into large steam jacketed kettles, which large body of juice must be heated to almost 200 degrees, in order to

get every particle thoroughly sterilized. It must also be stirred continually to prevent scorching so a great deal of the flavor must be carried off with the steam and vapor.

The Connell-Ott Company use an aluminum vacuum pasteurizer which consists of a series of small aluminum pipes passing through a steam drum, so that the juice when it leaves the press passes through the pasteurizing temperature of 172 degrees in a fine stream with scarcely any exposure to the air. These beverages are chemically pure and wholesome with a high degree of natural acidity and capable of being made into a variety of delicious drinks.

Tne Dustless Brush Company

AN exhibit that received a great deal of attention at the Exhibition this year was that of a line of Patent Brushes shown by the Dustless Brush Co., of 29 Colborne street, Toronto. The sanitary qualities of all their brushes is acknowledged by the medical profession and boards of health everywhere to be the only genuine sanitary brushes on the market. Their Floor and Carpet Brushes not only sweep clean and renovate floors and carpets, and disinfect every thread and crevice of the floor as you sweep, leaving your rooms clean, sweet smelling, sanitary and dustless. Does work that no vacuum cleaner, carpet sweeper, broom or oil mop can do.

Their Cloth Brush will do the same for the clothes that the Floor and Carpet Brush will do on the floor or carpet by using benzine, naptha, or gasoline in the reservoir removing grease spots, paint, etc., in a minute.

Their Horse Brush is acknowledged by all horsemen to be the horse's friend and groom's companion. Making the coat as slick as velvet, removing all dust and dandruff, leaving his pelt as clean as the palm of the hand. You can clean your horse with your Sunday clothes on and not soil them.

Their Hair Brush, using Petron in the reservoir, will give the hair the fluff and brilliancy of clean hair, and your scalp the refreshing coolness of a clean scalp. No soap in the eyes. No bending over a bowl. No waiting for a "wet" head to dry, and a positive cure for dandruff and falling hair.

The secret of their Patent Brushes is the reservoir at the top with absorbent tufts connecting therewith, through which the fluid is conveyed to the face of the brush, making them perfectly sanitary. These brushes are the only thing of their kind on the market, as the company hold patents covering the whole world. And every brush is fully guaranteed to do everything claimed for them or money refunded.

This is a good opportunity for farmer's sons to obtain a paying agency as the company want agents in every county in Canada.

The Channel-Chemical Company

AN excellent demonstration in up-to-date housekeeping efficiency was given at the Channel-Chemical Company's stand at the exhibition. It was clearly shown that the work of keeping a house clean and shining can be cut down to about half by the use of O-Cedar Polish and an *O-Cedar Mop.* For the interest of visitors these were used on the floor, on highly polished furniture, and on mirrors, with results that seemed marvelous to those who did not understand the chemical make-up of the polish or who did not already know its value as part of their own housekeeping equipment. When we get at the inwardness of *O-Cedar* goods, however, there is nothing so remarkable about what they can do.

The polish is a vegetable compound for cleaning and polishing all painted, varnished and finished woodwork. Being a purely vegetable compound it mixes freely with water, giving a high, hard, durable finish instead of the hazy, gummy, sticky surface left by mineral polishes. Because it is free from all grease, it is absorbed by the varnish, becoming a real varnish food and preserver. From the standpoint of cleanliness, *O-Cedar* has a

distinct advantage over other polishes in that it absolutely prevents the breeding of germs, a feature which is partly responsible for its wide use in cleaning woodwork and floors in hospitals and public halls.

In order that the polish might be used on woodwork, floors and furniture without the old-fashioned, back-breaking, muscle-aching manipulation, the *O-Cedar Polish Mop* was invented. With this it is not necessary to get down on your knees to clean and polish a hardwood floor, or to stand on a chair to dust the moulding or to move heavy furniture to clean under it. It is a long-handled and heavily padded mop. It slides easily between the stair banisters, into the far corners under the bed, beneath the radiator, or over the doors and window frames. Hard rubbing is not necessary. Wherever the mop passes, a good lustre is left and the dust is gathered up and held. This is where *O-Cedar* cleaning has another marked superiority over the dry dusting. The dust is not just removed from one place to mix with the air and settle somewhere else. It sticks tight to the mop; even after cleaning a floor the same mop will polish a plate-glass mirror without leaving a streak, and the dirt is only removed from the fibre when the mop-head is slipped from the handle and washed out on the washboard.

The O-Cedar Mop

The demonstrator at this exhibit gave an interesting object lesson in saving unnecessary motions in doing housework. Instead of taking one cloth to dust the woodwork, another to clean the floor, and then going over it all a second time to polish, using a great deal of unnecessary elbow grease, the whole room was dusted, cleaned and polished in one operation with the *O-Cedar Mop*. It is needless to say that the saving of time as well as energy was a matter worth consideration. Before being used, the mop-head was allowed to stand for a few hours in a box containing a little of the liquid polish. In this way it absorbs enough to do the work without any waste. At the price at which the Channel-Chemical Company are selling these goods, they make one of the most economical labor-savers ever put on the market for housekeepers in the city or on the farm.

Besides its use in the house, *O-Cedar Polish* has no equal for cleaning carriages, and automobile beds, seats and tops, or for removing grease from gears, cylinders and chassis. It is a great deal less expensive and easier to apply than a new coat of varnish and after seeing it used on a mahogany piano case, leaving a surface like a mirror, you have every assurance of certain results. A letter addressed to the Channel-Chemical Company, 369 Sorauren avenue, Toronto, will bring any reader further information concerning *O-Cedar* goods.

British Columbia Government Exhibit

HOME-MAKERS and builders in Canada are always on the lookout for woods that will take a high finish and make a pleasing grain and at the same time come within the pocket-book compass of the ordinary man. This fact is impressed upon one as he sees how great an attraction a pleasing bungalow or a newly constructed barn or office has for the average farmer. Person after person thronged such exhibit but no exhibit that appeared at the Canadian National at Toronto carried a greater volume of visitors than the extensive and highly ornamental exhibit of the B. C. Government.

A small office building was located at the extreme end of the exhibit and it was here that the visitor's attention was particularly drawn to the construction material.

The interior fittings, the doors, the panelling, the beams and the floors were made of Douglas fir from the celebrated trees that grow so luxuriantly west of the Rocky Mountains. Already the farmers of Canada are getting educated to the use of this timber and the demand for it is already extending from the prairies eastward over a great part of the East. Owing to the fact that lumber is a fading quantity in many parts the possibilities of the Pacific province are by the means of such exhibits being brought to the attention of builders and home-makers everywhere.

Particularly attractive in a dining-room or living-room is the wide paneling effect possible by the use of the Douglas fir. These take on a high finish in either dark or light colors and present a singularly rich and attractive appearance. The artistic construction in this office building and the exhibits of boards, sheets, and square timber outside, gives one an impression of the big assets to the Western province in the matter of building material. It is estimated that the forest area covers 182,750,000 acres But it is not alone in wood that British Columbia is wealthy. The province is one of the richest of the Dominion and in her yet unpeopled valleys there will flourish a population of contented Canadians that will enjoy the richest kinds of livelihood.

In fruit, the display of apples, peaches, plums, pears, grapes and nectarines declared volumes for the fertility and climate of the various sections of the province. For such apples as the Winter Banana, Newton Pippin, Grimes' Golden, and the Spitzenburg thrive to perfection. The celebrated McIntosh Red as grown in the Okanagan, the Kootenay and adjacent Valleys has a flavor and appearance that beats anything grown in the Dominion. As one who has traveled through these regions knows this exhibit did not do full justice to this department, owing to the earliness of the Fair before these varieties of apples were ready.

In minerals the display as was to be

British Columbia Government exhibit at the Canadian National Exhibition.

expected is magnificent. The Rockies are full of wealth and this province is showing that it is fully alive to the importance of this industry. Her mineral production for 1912 was $32,440,800, oil, marble, gold, copper, diamonds, silver, cement, coal and lead constitute the chief minerals.

Taken altogether the exhibit was a striking tribute to the resources of the Pacific province whose agricultural development is going on very rapidly at the present time. The Exhibition Commissioner, Mr. W. A. Lang, who was in charge was kept busy explaining to interested parties the possibilities open to settlers and residents from all parts of this province.

The new railroads are opening vast tracts of fertile country which will be soon filled. Literature issued by the province giving all the information about these lands was distributed to visitors and specific information can be had by applying to the Provincial Bureau of Information at Victoria, B.C.

Canadian Gate Co.

A GATE with a working automatic latch, and one that can be set either high or low to admit small animals and keep out large ones or that can be raised to get above the snow, always appeals to the farmer. When you add to this strength that will hold even a bull at bay, a pleasing appearance and an ordinary price you have got all the reasons that ordinarily weigh with the practical farmer. So many troubles arise from poor, bad working gates that the exhibits of the Canadian Gate Company, Guelph, at the Canadian National Exhibition brought much favorable comment. Their celebrated Clay gates from 8 ft. to 16 ft. in length, adjustable at each end to raise or lower, for road, stock or field purposes seem to combine in them the last work in gate mechanism. Besides this they have a ball-bearing automatic self-opening and self-closing gate with a contrivance, simple, strong, and easily worked by the driver of a rig. These gates are guaranteed and are made of steel malleable and, therefore, unbreakable.

Besides these they carry fancy road gates, double drive gates, high bar gates, and "Stonewall" Bull Gates all of which are reasonable in price and built to stand the strains that gates have to meet.

A patent clothes reel that shuts up and is raised at leisure will be beloved by every man's wife who knows the troubles incident to a long clothes line.

Write to the Canadian Gate Company, Guelph, Canada, for full particulars and literature.

Canadian Independent Telephone

IN the south wing of the Process Building the Canadian Independent Telephone Company again occupied as they have for several years past, a prominent place. This applied both to their handsome booth and to the interest the exhibit attracted among the thousands of visitors. It was a telephone exhibit entirely, and it had something to interest everybody, whether it was the city man who wanted telephone communication in his factory or residence, or whether it was the farmer who was interested in a rural telephone system for his neighborhood.

One thing that the city man found worthy of careful inspection was a working demonstration of the Presto-Phone, which is an automatic telephone system that will serve up to one hundred subscribers without any girl operator, the telephone being operated by mechanical or automatic switches which are conveniently placed in a very attractive cabinet. Anyone looking for a private telephone service for inside use should not fail to get all particulars in regard to the Presto-Phone.

In magneto equipment for rural systems, the exhibit was very complete including a fifty-line switchboard of most up-to-date equipment and connected up and operating telephones of different types. The telephones, both the wall type and the desk sets show the highest class of workmanship, and in fact the entire exhibit told plainly that the company's factory on Duncan street must be equipped with the most modern and complete machines and tools for turning out equipment of a uniform quality.

Every year the Canadian Independent Telephone Company have demonstrated the progressiveness of their engineering and factory staff by having some new equipment to show the public. One of the new products shown this year was a pole

changer of their own design and manufacture. There have been many pole changers on the market, but the Canadian Independent Telephone Company believed that they could improve on all these, and it looks as though they have succeeded in doing this. Their pole changer does not require any wet battery and is simpler than any other on the market, and therefore less liable to get out of order.

The company reports that during the last year they have taken care of a fine business which included a large proportion of the municipal telephone systems that have been built. Guaranteed quality and prompt service have been the factors making this success. They solicit correspondence from any one interested in telephone matters, as the company have a qualified staff to supply any information desired.

The Hinman Milking Machine

HAND-MILKING days are about numbered on the dairy farm. The success that has attended the introduction of this light, simple machine, the *Hinman Milker*, manufactured in Canada by H. F. Bailey & Son, of Galt, has captured the farmer's favor in an unprecedented manner.

H. F. Bailey & Son, Galt, Ontario, the Canadian manufacturers had a working outfit in the model steel truss barn erected on the Canadian National Exhibition grounds and they were jubilant over the way the orders for this machine exceeded all their expectations. The farmers visited the place in crowds and were delighted with the simplicity of the whole affair, the power required being one horse-power to operate the three machines.

Already many of these machines are installed in Canada and many of their users called at the exhibit to express their appreciation and many to order another unit for the service. The points of this machine's popularity are largely due to the fact that there are no gauges, no safety valves, no pulsating parts and no metal piping to sterilize, while the simple drive-rod along the top of the stanchions is operated by hydro power, treadmill, or gas engine. The theory of its easy working is the principle of the progressive vacuum. The pump can be attached at any point along the rod and in a twenty-cow dairy, three units in one row can be supplied complete for approximately $175. One man with this equipment can milk 20 to 25 cows in one hour, and do it well.

Anyone who has seen the machine in operation in an average farmer's stable will at once be charmed with the ease and simplicity of the whole thing. The effect of a milking was shown at the Exhibition by a glass demonstrator from which water was drawn and in turn discharged. The opening into the receiving pail was so made that the delivery could be watched without interference with the action of the *Milker* as there is no vacuum in the pail of the *Hinman Milker*.

An official of the City Health Department paid a visit to the building during the fair and passed some very favorable remarks re the simplicity and ease to clean, and keep clean, the *Hinman Milker*, as the parts to clean are so few and so easy to reach.

H. F. Bailey & Son, of Galt, Ontario, would be glad to send to any farmer or dairyman their illustrated booklet showing fully all the advantages. Even small farmers with only a few cows will find an installation of the Hinman Milker of more value than many other expenditures easily incurred.

Chisholm Milling Co.

"IF chicken chowder won't make your hens lay, they must be roosters," says Col. Purina of the staff of the Chisholm Milling Co., Ltd.

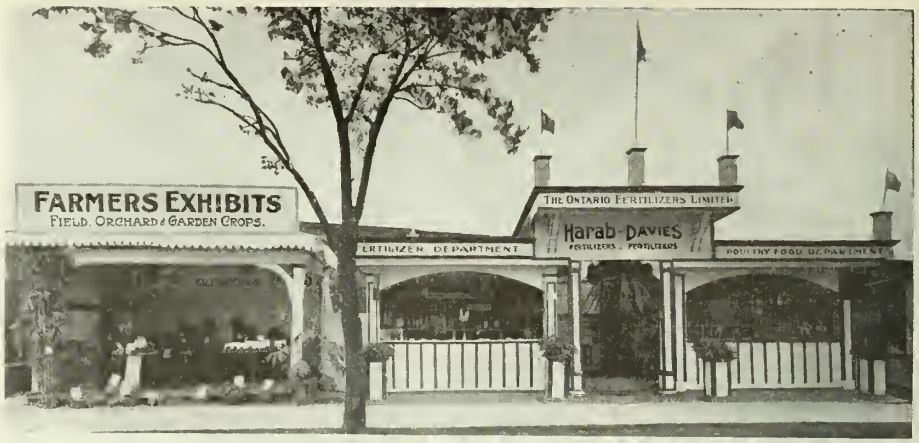
Equally true it might be said, that if the Chisholm Milling Co., do not please every customer it is not because they fail to give value.

At their exhibit at the Canadian National Exhibition, great interest was taken in the chicken feeds—the celebrated Purina Chicken Chowder and Purina Scratch Feed. These two feeds are made of pure materials of known value. "Give Biddy," they say, "all the Purina Chowder she will eat every day in the year and feed her Purina Scratch Feed, two

or three times a day on a litter of hay or straw and she will fill your egg basket," and assuredly eggs are going to be money this winter. It pays to get the best feeds. The Chisholm Milling Company is a well known Toronto firm who will be happy to send any reader of FARMER'S MAGAZINE their 48-page poultry book, free.

Send to this firm for literature and price lists of feeds. Dairy products as well as poultry products mean big returns for the farmer this winter. Get the most money by using the highest quality feeds. Write The Chisholm Milling Co., Ltd., Toronto, Canada.

Dairy and Stock Feeds are also a specialty of this milling company. Cotton Seed Meal "high in crude protein and fat," as Prof. Henry remarks in his "Feeds and Feeding," Brewers' Dried Grains, Hominy Feed, Alfalfa Meal and Molasses, ingredients of their Purina Dairy Feed constitute a cheap nutritious feed of which no dairyman can afford to be unmindful.

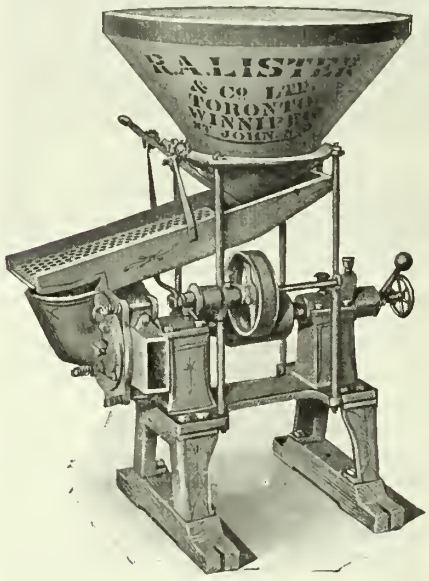


Lister Gasoline Engines

THERE is something very substantial about the way British-made goods are put up. Most of us think of them as the kind that are made to wear and give lasting service. This is the impression the writer received when he entered the attractive display of Lister engines in their tent at the Exhibition last week.

Lister engines are evidently not built for show alone, nor simply to sell. They are made for work, and every part shows the best of workmanship. They are upright in design, have automatic oiling systems, throttle governor, and the most expensive type of Mosch Magneto, as explained by their representative. Even a competitor on the ground was heard to remark, "Yes, the Lister is a well-built engine."

Quite a number of farmers over Ontario are now installing electric lighting systems for their barns and homes. The Lister people make one of these complete systems, suited to the needs of any size of farm buildings. An engine of 3 h.p. will supply plenty of power for most cases, and, of course, could be used for scores of other odd jobs when not running the lighting plant. In another part of the tent was the exhibit of Melotte Cream Separators. Most farmers over Ontario know the Melotte, and know it for its easy running and durability. The man in charge explained that there are already in Canada alone over 50,000 of these separators. The writer came across a farmer in the West a few years ago who had run a Melotte for seven years, and his only expense was for oil and rubber rings.



The New Lister Grain Grinder.

The Lister Co. have just recently placed on the market a new grain grinder. After severe tests with this machine the firm guarantees that it will do 10 per cent. more work than any other in Canada on the same power. While these machines have been on the market only a month or more, yet 22 of them have been placed on farms and are giving splendid satisfaction.

The Lister milking machine was also exhibited and attracted much attention from both customers and competitors. "Milking now for the boys is a good deal like recreation" is the way one of their most recent customers put it in writing the company a few days ago. Over 500 of these machines have been successfully installed within the last three years, and, notwithstanding war conditions, and the relaxation of buying, their English plant is installing over seven milking systems every week. A catalogue of the R. A. Lister machinery can be secured by writing their Toronto office.

Ontario Fertilizers, Ltd.

FIND out what you can grow on your farm and then specialize. There are big profits in farming and independence unknown in the other occupations.

Canadian farms are making some good aggregate returns, but in the average yields from the soil there is much room for improvement. Knowing what to do and when to do it is most essential to the farmer. If he can get profitable returns from the addition of fertilizers he is a foolish farmer who will neglect the change.

Such, indeed, was the logic that moved many a farmer to interest himself in the splendid exhibits at the Canadian National of the Ontario Fertilizers, Limited.

While there are hundreds of farmers using fertilizers on farm crops in various parts of the country, the average man has not yet grasped the big returns possible by a wise application of these to his crops. The man who applies costly fertilizers to a soil that needs something else or to a soil already well supplied, lacks brains in his business. He needs to observe more. "Use your powers of observation," says Ontario Fertilizers, Limited, and see by the character of the growth on your land what is wanted. Is the straw weak? Have you a poor stand and late growth? Have you too much early growth with a poor development? Is your clover catch a failure?

These are some of the questions to be asked one's self. There is a remedy for

this, whereby a little paying crop will be turned into a big success.

Prof. Zavitz, of the O.A.C., has issued a pamphlet telling of the failure with the co-operative experiments of farm crops while using fertilizers. These results show that the main points along which this firm's arguments are made are sound and dependable.

One of the chief attractions at their exhibit, was the table whereon samples of roots, vegetables and grain were shown, grown without fertilizers and also with fertilizers in varying quantities and manner.

The names of the men who grew the product were attached to each exhibit and the results in Fall wheat, potatoes, mangolds, turnips, corn, oats and barley were simply marvelous. The extra bushels were obtained at a very low cost. Besides this the joy of handling a big crop of anything always inspires the farmer and adds much to the joy of farming.

On pasture crops, alfalfa and hay crops the results have also been most encouraging. During the coming year when agricultural prices are going to be high for everything, every farmer owes it to himself to make his farm produce to its maximum. Nitrates, phosphorus and potash in the easily available forms to be found in the Harab and Davies Brands of the Ontario Fertilizers, Limited, will be extremely useful and economical.

Livestock feeders with high grain prices will do well to examine the Digestive Tankage for hogs. This shows an analysis of 60 per cent. protein. It gets the most out of the other feeds.

Poultry supplies of all kinds from oyster shell to beef scraps are put up in convenient form for poultrymen on a small or large scale. These feeds are coming to the front very fast and these results go to show that the production of eggs and dressed poultry can be cheapened by their use.

The firm are anxious to meet all arguments and problems of farm soils and feeding. They have special means of attending to all inquiries. If you have a problem write at once to them for advice and for prices on their goods. They want results from their own fertilizers and the last thing they would do would be to advise an application where they knew results would not advertise their goods. Write for their prices and bulletins on the subject. Now is the time to increase farm outputs. The Ontario Fertilizers, Limited, West Toronto, has the way to do it.

Farmer's Cement Tile Company

WHEN the practical evidence of bigger returns from drained land are shown to the average farmer, he begins to take notice. If by putting in underdraining on a field, he can increase his yield of oats from $9.92 to $22.16, he reckons that the $12 extra will pay him handsome dividends on his work. Yet this is exactly what the Ontario Agricultural College has shown. In wheat the result was even greater. On untiled land the yield was 6.37 bushels which rose to 19.44 when the same land was tiled. This proves that it is not all in soil or cultivation or manures. One must have the physical conditions right.

The Farmer's Cement Tile Machine Co., were the only company exhibiting tile machinery at the Canadian National Exhibition this year. It is an easy matter to demonstrate to the visitors the ease in which the work of tile making could be done. Some visitors operated the machine themselves, much to their own satisfaction, while giving conclusive proof to the onlookers of the simplicity as well as the possibilities of the cement tile maker.

The company demonstrated by using wet sand how the work was done. The ease and rapidity with which the tiles were manufactured convinced many a farmer of the advisability of procuring one of these machines. It was shown that tiles could be made for as little as $4 to $6 a thousand. Six-inch tiles that cost many farmers $35 a thousand can be made at the outside for $12.50 per thousand with this company's machine.

The Ontario Agricultural College uses this machine and it is noteworthy that of the many users of this machine from all parts of the country who paid a visit to the Exhibition, not one of the number had a single complaint to make.

Any farmer can secure an illustrated catalogue which the company issues by writing to the firm at Walkerville, Ont.

Renfrew Machinery Company

ECONOMY in production is as necessary on the farm as in the factory; it means increased efficiency, which in turn ensures a larger output.

With prices of farm products increasing, and prospects for still further increase in the near future, the wideawake Canadian farmer is faced with the problem of power possibilities to enable him to utilize his efforts to the best possible advantage. Naturally, his first thoughts will be concerning the gasoline engine, which is conceded to be the most efficient and satisfactory form of power for driving and operating farm machinery; and his choice will rest on the type of engine that is easiest to handle, the most durable and the most economical.

That is why the *"Renfrew Standard"* gasoline engine, shown by the Renfrew Machinery Co., Ltd., at their splendid exhibit in the Machinery Annex at the Canadian National Exhibition, was so attractive to scores of farmers, who stopped to examine it, also their truck scales and cream separators.

That their claim for economy in connection with their wonderful gasoline engine is well founded is proved by what is said by one of their users, a farmer in Eastern Ontario:

"The six-horse-power *Renfrew Standard* gasoline engine sold to me some months ago has been used for cutting wood, and I have cut about 2,000 cords, and I am pleased to say I have had excellent satisfaction with it. I found it

very easy to start, even on the coldest days. It never gave us any trouble whatever, and only used on an average of four gallons of gasoline per ten-hour day. I am pleased to recommend it to anyone intending to buy a gasoline engine."

An economical carburetor is essential to a good engine, and this firm has been successful in accomplishing this important feature of engine construction. Their satisfied customers are evidence of the splendid results they are achieving in this respect.

Moreover, the firm is a splendid one to do business with. Every farmer knows the advantage of dealing with a reliable and fair firm. It means much to both sides, and farmers who wish further information will have it cheerfully sent them by writing to the Renfrew Machinery, Co., Limited, at Renfrew, Ontario.

Particularly interesting were their truck scales. These handy implements save farmers a great many pounds in all their stock sales yearly, and keep a man posted as to the results of his feeding operations. These scales are handy ones on wheels, and have all the latest improvements.

Little need be said of the now famous "*Standard*" cream separator, of which there are many thousands in use. The glass sample used at the exhibit showed clearly the wonderful self-oiling system. This wonderfully successful separator is a credit to the company, and is another proof that "Made in Canada" goods are superior.

Wm. Rennie Co., Limited

THE maxim that one's works should prove their words is evidently the keynote of the Wm. Rennie Company, the old well-known firm of Canadian seedsmen. The evidence of their faith in their seeds lay in their splendid exhibit at the Canadian National Exhibition.

This firm tests their own seed at several farms through the country as well as on their own at Long Branch, Ont. Their success in developing strains of hardy and prolific Field Roots has been phenomenal. Around the sides of their exhibit were arranged samples of Mangels, Turnips, Beets, Onions, Carrots, Squash, Pumpkin, Sugar Beets, and Montreal Musk Melon, all of this season's growth. In every case the products were larger than the great bulk of the average products of the field at the end of the growing period several weeks later.

Farmers and feeders were particularly attracted to their Mangels. The Giant Yellow Half Long, the Golden Tankard, the Perfection Mammoth Long Red, the Yellow Leviathan and the Leviathan and Jumbo Sugar Beets, each had their merits and doubtless under their individual conditions would make any arguments as to their relative feeding values.

The Turnips were particularly attractive in that they had obtained so great a size at a time when Field Turnips are supposed to be beginning to size up for the final season's work. Even the Aberdeen Purple Top compared well with the Improved Greystone, the Purple Top Mammoth and the Selected White Globe in size and apparently splendidly constituted flesh.

This has been a good year for Onions where the soil was suitable. Big stories are being told at many centres of the success in raising this vegetable. Rennie's Red, Yellow and White Globe Onions were individually perfect. Special mention must be made of the Montreal Melons, now so justly famous in Canada. Several big beauties grown from Decarie's seed were on exhibition. White Wave Oats, Carrots, Squash, Frame Cucumbers and Sugar Beets were also attractive members of the group.

Above all and decorating the whole display with form and color, were the Giant Crego Asters, dignified Gladioli, faultlessly perfect Dahlias of splendid variation in bloom and development. The developments in the big Asters seems to progress each year. Rennie's have made a special feature of this work and many visitors were attracted to the splendid display.

Another feature of the Rennie firm that is one of the strongest forces at play in their business, is their unfailing courtesy and kindness under all circumstances. No matter what comes or goes, any customer who drops into their offices meets with a pleasant smile and sympathetic hearing to their needs and wishes. This was well exemplified by the young man in charge of this exhibit. It was his business to assist people and his enthusiasm and genial face made the setting of Asters and Gladioli as attractive to the public as sugar to a honey bee.

The Wm. Rennie Company, Toronto, would be pleased to send anyone their Catalogue of Dutch Bulbs now and a copy of their Seed Catalogue when issued in January next.

They maintain important branches at Montreal, Winnipeg and Vancouver.

The Goodyear Tire & Rubber Company of Canada, Limited

IT was fitting that the exhibit of the Goodyear Tire & Rubber Co. of Canada, Limited, should have occupied a conspicuous place in the Transportation Building, as this building was devoted to automobile and accessory exhibits. The right tire equipment has such a great influence on the amount of pleasure and service derived from an automobile, that it was not surprising to see so much interest given to the Goodyear exhibit.

To the uninitiated, there appears to be little difference between one kind of tire and another; but Goodyear No-Rim-Cut Tires have four exclusive features, which are to be found in no other tire.

The first of these exclusive features, absolutely ends rim-cutting. The Goodyear Company controls the only feasible way of eliminating this trouble. It involves one hundred and twenty-six braided piano wires in the base of each tire. This method is controlled by secrecy.

To save blow-outs, these tires alone get the extra "On-Air" curve which adds to the cost of manufacture tremendously. However, it reduces the risk of blow-outs caused by wrinkled fabric to a minimum.

To combat tread separation, the Goodyear Company paid $50,000 for the patent rights to a process which is used by them alone. During vulcanization, hundreds of large rubber rivets are formed in the tire at the point where tread separation usually takes place. This process reduces the danger of loose treads by 60 per cent.

The fourth exclusive feature is the All-Weather Tread. This tread is tough, it is double thick, it is as smooth riding as a plain tread. But it grasps wet roads in a resistless way with countless small, sharp-edged grips.

Although no other automobile tire can offer any of these features, the Goodyear tire is not high-priced. In fact it is lower in price than eighteen other Canadian and American-made tires. The Goodyear Company has issued a series of eighteen bulletins which should be in the hands of every motorist. These bulletins describe the reasons tires sometimes go wrong and prescribe a remedy in each case. This series of bulletins is sent free to any automobile owner upon request to the Goodyear Tire & Rubber Co. of Canada, Limited, 152 Simcoe street, Toronto.

THE CRICKETS.

A. M. Kimball.

Pipe, little minstrel of the waning year;
In gentle concert pipe;
Pipe the warm noons; the mellow harvest near;
The apples dropping ripe.

The tempered sunshine, and the softened shade;
The trill of lonely bird;
The sweet, sad hush on Nature's gladness laid;
The sounds through silence heard.

Pipe tenderly the passing of the year;
The Summer's brief reprieve;
The dry husk rustling round the yellow ear;
The chill of morn and eve.

Pipe the untroubled trouble of the year;
Pipe low the painless pain;
Pipe your unceasing melancholy cheer;
The year is in the wane.

Can't understand where all the coal goes to?

How often have you said that?—yet you knew it all went into the stove. Your stove is perhaps one which requires constant feeding, but does not give sufficient heat for the amount of fuel consumed.
The SUPREME RANGE will give you more comfort during cold days, better cooking and baking service with only half the quantity of fuel required by ordinary stoves. We absolutely guarantee this.
The "Supreme" has an improved patented heating arrangement that economizes on fuel.
There's a dealer in your town who will be glad to show you. Descriptive booklet "S" sent free on request.

Supreme Heating Co.,
Welland, Ont., Canada

Do You Want An Agricultural Education?

We will pay your expenses this winter at any agricultural college you name, if you will give a little of your spare time each week to the interest of

The
Farmer's Magazine

Scores of young men have had their college expenses paid in this way. If you prefer a course in a business college or a university we can help you finance it.

The
Farmer's Magazine
is the herald of agricultural progress —a monthly magazine which deals with the problems of the farm in virile and readable form.

Send to-day for particulars to

The MacLean Publishing Co.
Limited
143-153 University Ave., Toronto

Gunn's Shur-Gain Stock Foods and Fertilizers.

THIS exhibit attracted large crowds of farmers. Messrs. Gunns Ltd. explain this as being due to the increased interest taken by farmers in the use of fertilizers this year. The farmers of Ontario, like the farmers of older countries including the United States have reached the conclusion that commercial fertilizers are not only necessary but profitable. The problem before the farmers is to study the requirements of their soils and crops and purchase the most suitable fertilizer. For this reason farmers showed intense interest in the Shur-Gain fertilizers and the grains, vegetables, etc., which had been grown with "Shur-Gain" and other grains, vegetables, etc., on which no fertilizers had been used. The contrast was most convincing.

The sentiment of the crowds is best indicated by a remark of one farmer who stated emphatically that he firmly believed that he could make his fifty produce more stuff by the use of fertilizer than any hundred in the neighborhood. One of the salesmen connected with the exhibit informed us that with one exception the fruit that took prizes at Toronto, was grown by users of Gunns' Shur-Crop Fertilizer. Of course, he explained, we do not attribute this entirely to the fertilizer, but it shows that the most up-to-date and progressive farmers in Ontario are users of Gunns' Shur-Crop Fertilizers.

The fact that Gunns are also in the Poultry Food and Stock Food business was very evident. A pen of white leghorn pullets three and one-half months old was proof positive of the value of their foods for forcing birds along to an early maturity. These birds would be laying at from four, to four and one-half months, was the opinion vouchsafed by a number of leghorn fanciers.

In looking over the samples we were surprised at the completeness of the line of foods. Everything in the line of Poultry Foods recommended by our Experimental Stations and farm magazines or papers was there. A few of their best sellers, we were informed, were their calf meal, hog meal, and Poultry Foods such as beef scrap, poultry bone, scratch feed, laying mash and chick feed. In answer to a question as to whether they put up any stock tonics we were informed that Gunns Ltd. were in the Stock Food business not the Stock Fad business. Farmers desiring further particulars regarding Shur Gain fertilizers and other products manufactured by "Gunns," should write to Gunns Limited, West Toronto.

FREE!!! FREE!!! FREE!!! FREE!!!

TO FARMERS AND FARMERS' SONS

SHORT WINTER COURSES at the ONTARIO AGRICULTURAL COLLEGE, GUELPH

The only expense to you is board at reasonable rates while in Guelph and reduced railway fare.

STOCK AND SEED JUDGING—January 12th to January 23rd, 1915. Judging Horses, Sheep, Cattle and Swine; Slaughter tests; lectures on breeding, feeding, etc. Judging grains and seed of other farm crops; selection, germination, purity, etc.

FRUIT GROWING—January 26th to February 6th, 1915. Varieties, nursery stock, spraying, fertilizers, pruning, marketing, etc. Classes in apple packing.

POULTRY RAISING—January 12th to February 6th. Poultry houses, breeding and mating, judging, feeding, winter eggs, fattening, dressing, marketing, etc.

DAIRYING—3 months' course in factory and farm dairying—January 4th to March 19th, 1915. Summer course in butter and cheese-making. Course in cow-testing and ice-cream making.

BEE-KEEPING—January 12th to January 23rd, 1915. Care and management, swarming, queen rearing, diseases and treatment, quality of honey, marketing, etc.

For full particulars write for our Short Course calendar, which will be mailed on request.

G. C. CREELMAN, President

A Hundred Years Ago

Canada faced an emergency. Sir Isaac Brock was equal to the occasion—and the Battle of Queenston Heights was won. But it is the emergencies of the home that come closest to our lives now-a-days. In all well-appointed homes, Dr. Thomas' Eclectric Oil is found, and wherever it is found, it is a friend, a highly dependable friend to the entire household. It is an emergency preparation that will cope successfully with many minor ailments and with numerous complaints that afflict suddenly and require speedy attention. In the hand of experienced mothers and housewives it will often ward off, by speedy application, sickness that otherwise might prove serious. It is always ready for use, and no preparations are necessary to put it into effect. If any member of the household sustains a cut or a bruise, a burn, scald or contusion, this remedy will give relief. If a child be seized with colic, Dr. Thomas' Eclectric Oil, when sweetened with sugar, will overcome the pain and give the little sufferer ease. If a child shows symptoms of croup or other throat trouble, and the attack be met with Eclectric Oil, the suffering will be greatly mitigated, and by continued treatment with the Oil the ailment will be speedily subdued.

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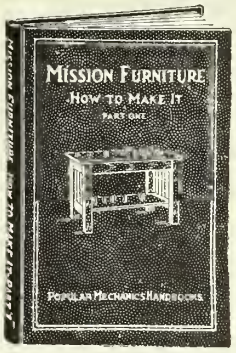

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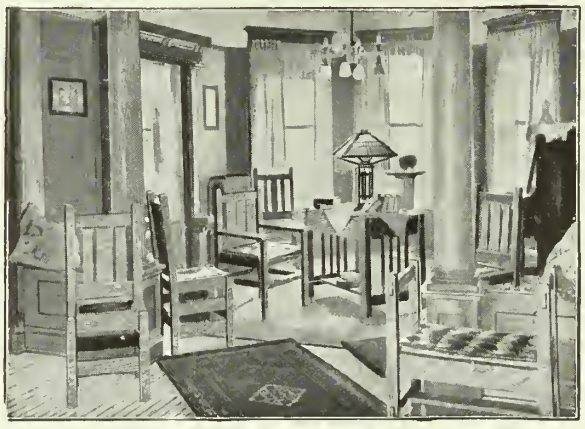

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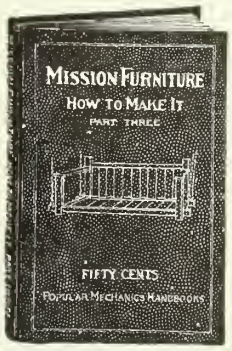

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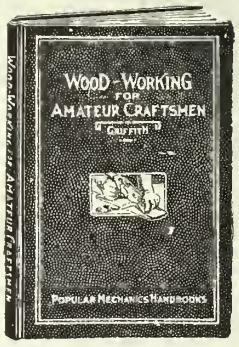

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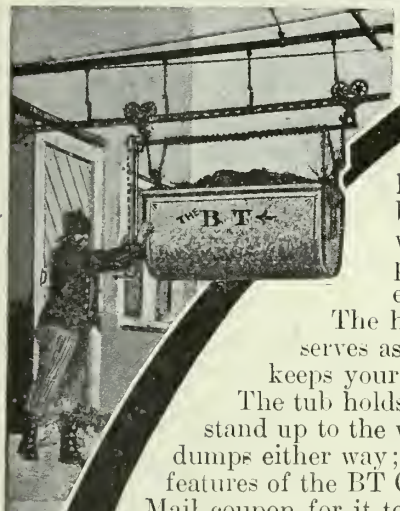

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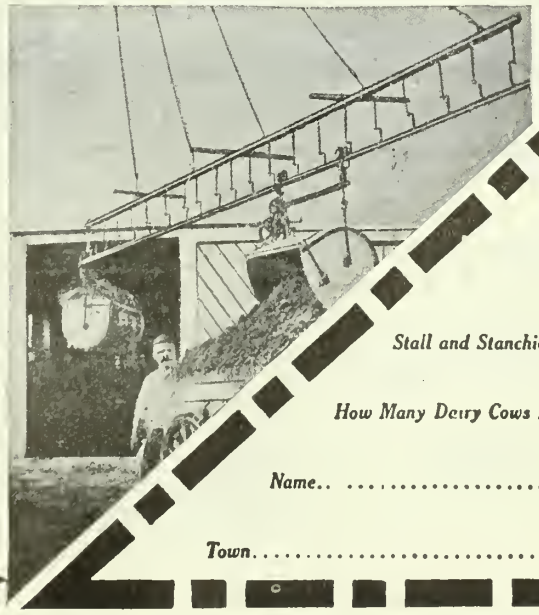

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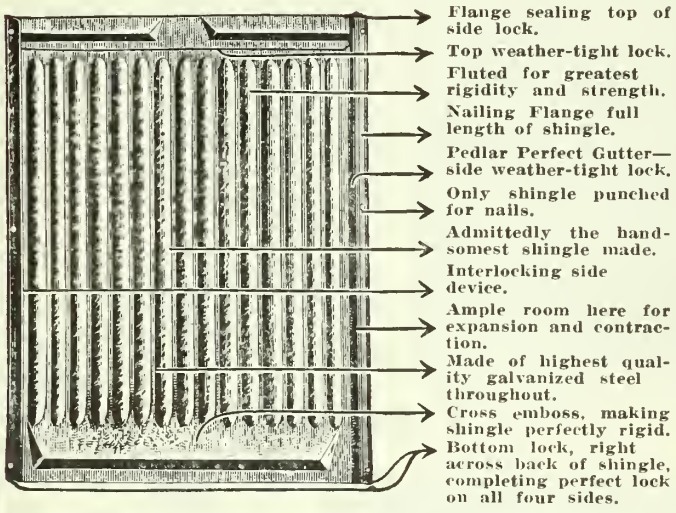

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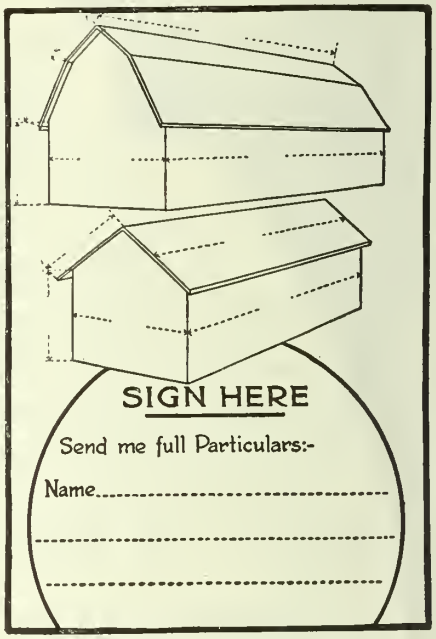

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FARMER'S MAGAZINE

F. M. CHAPMAN, B.A., Man. Editor NOVEMBER, 1914 ETHEL M. CHAPMAN, Assoc. Editor

The dignity of agriculture. The farm home of Alex. Mitchell, north of Douglas, Manitoba.

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IN DECEMBER there will appear some exceptionally interesting articles. W. D. Albright, of the Peace River, writes under the attractive caption of the Poetry of Achievement. It is a captivating story, well told. James E. Poole, the greatest American authority on livestock, contributes a review of conditions and the trend of prices. Justus Miller writes again. Bliss Fawcett tells of big strawberry revenues. James Anthony gives a picture of Farm Strategy. W. A. Craick handles the Beet Sugar situation. F. C. Mackenzie tells of the Icelander Farmers in Manitoba. W. L. Smith estimates the affect of the present war. Staff writers and others contribute to make this number well worth the position that Farmer's Magazine is taking in the agricultural world with Canadian farmers. Particular merit is shown in the woman's field also. The issue will dignify your farm home. The cover design is one that has never been approached on a farm publication.

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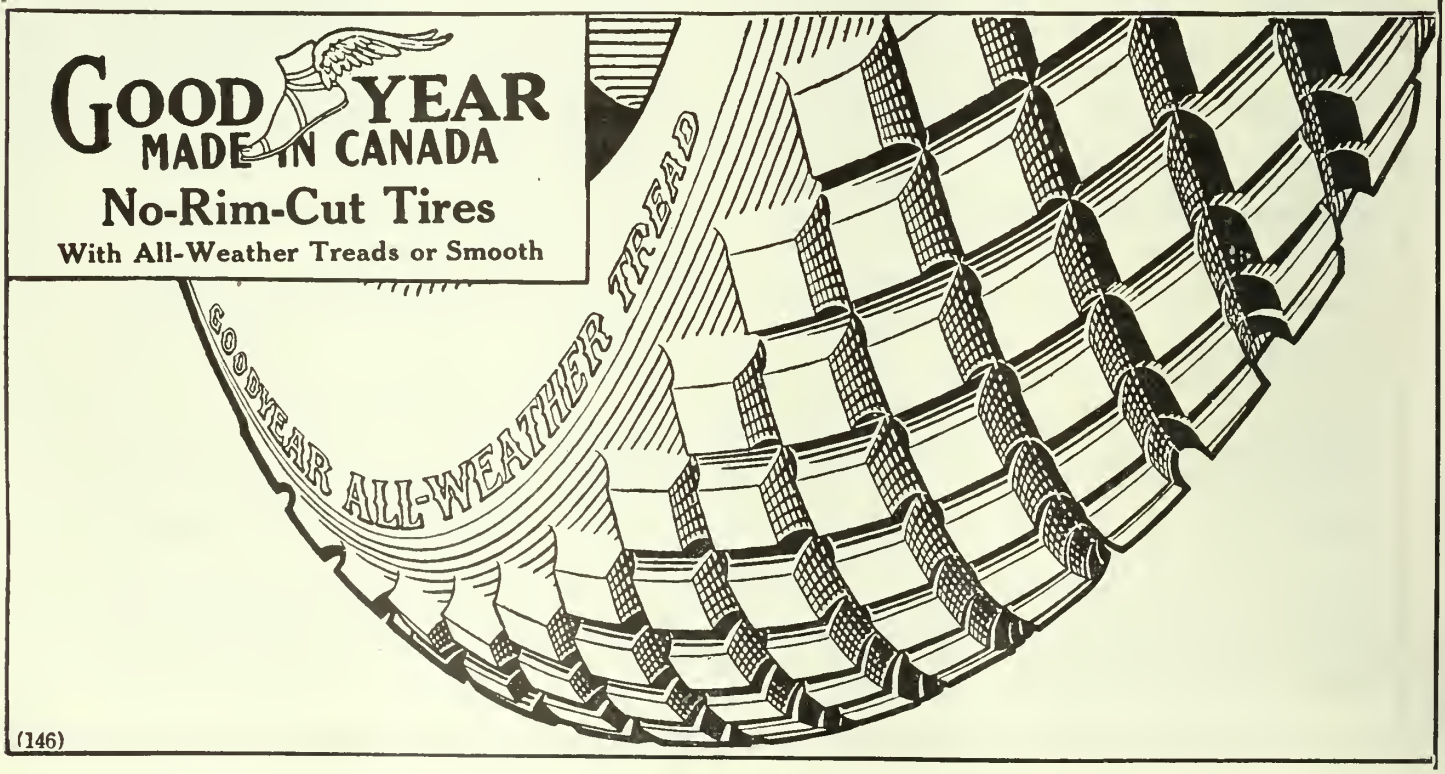

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The Tale of the Karakule: By Frank M. Chapman

A Sheep That is Producing in Canada, Fur, Wool and an Unexcelled Leg O' Mutton. Big Prices for Pure-Breds.

CANADA is a well-favored spot for the production of furs. The early explorations of the Hudson's Bay Company in the Stuart times were the result of nature's big supplies of fur-bearing animals on this continent. Their interest in the trade has continued down to this day.

Yet people have been slow to improve on the natural supply. An impetus has been given to it by the profits from the Black Fox industry now so well advertised. The number of companies that have been formed in Canada for the purposes of fox ranching rivals Cobalt in their extent. Immense sums have been paid for breeding stock and in many cases big dividends have been paid. But it is scarcely to be believed that this repetition of joint stock companies can keep on forever without some economic explosion somewhere.

A full-blood Karakule ram. Note the horn. It is an exceedingly attractive animal and promises to become a familiar sight on Canadian farms. A similar ram just purchased in New Brunswick cost $1,800.

Another branch of fur-farming promised some interesting developments also. The production of fine quality Persian Lamb furs can be encouraged in Canada. The Karakule sheep of Asia, will thrive and do well here. Already several firms have been formed for the purposes of producing these goods, and although little publicity is given the work, considerable has already been done to prove its practicability. Farms in New Brunswick, Prince Edward Island and Alberta are purchasing coarse wooled ewes as the Cotswolds, Leicesters and Lincolns for breding to the crossbred Karakule rams.

The Karakule sheep has come to Canada and will soon be a very interesting fellow with the ranchers and farmers of this country. Some imported sheep and rams are in quarantine now, and for these as high as $1,800 each are being paid. These are placed on the ranches and mated with Cotswold, Lincoln and Leicester ewes, to produce half-bloods for the building up of other herds.

This cross on our hardy, coarse-woolled sheep produces a skin in the lambs of high lustre and adds wonderfully to the flesh attractions of spring lamb. It does not seem far away when farmers who raise sheep for mutton will be buying these half-bloods for purposes of increasing mutton properties and mutton flavor.

The United States are experimenting at their special breeding farm at Beltville, Md. The annual importation into that country of $14,000,000 worth of Persian lamb skins, awakens in the shrewd American, the thought that perhaps he can produce these goods at home.

Reports from Ottawa and private people will be noted in the article. Already over 200 sheep have left Ontario flocks this fall for purposes of breeding this sheep.

It is only another way of telling Canadian farmers that the sheep business has a big future before it.—Editor.

The discovery of this sheep goes to the credit of the Russians. The Karakule, a name meaning black lake, was applied by them to the several breeds of sheep that they found in Bokhara in Russia Turkistan. Among these was one called the Arobi, and it is from this branch that the Canadian representatives have come, indirectly through Dr. C. C. Young's importations into the U.S. According to Dr. Sinitzin, a Russian Professor of Animal Husbandry, the small Arobi is descended from the Mamai, the oldest breed of domesticated sheep. He resorts to the Bible for further history and claims that Jacob won Rachel by knowing how to breed the pigmented sheep. But like all such fanciful explorations, the theory must be taken *cum grano salis.*

Dr. C. C. Young, who was a native born Russian, who came to the United States at the time of the Chicago World's Fair, introduced the Karakule into Dakota.

The Karakule sheep being inured to the hardships of desert life, is so constituted that it can go for days without water, and on account of the unbearable heat in the summer, and the great cold in the winter in Bokhara, this desert animal can stand infinitely more heat and cold than any other sheep, therefore, when crossed with our native sheep, there is a great increase in hardiness and tests made in Eastern Michigan have proved that 25% of the Karakule blood infused into Merinos have produced a sheep that defied the blizzards and awful cold of that country; the grade Merinos seeming to prefer to be out-of-doors instead of in the barn, where the full blood Merinos sought shelter. Karakule sheep belonging to the large, or intermediate class, when crossed with our native sheep give an increase of 35% in weight and have the properties of absolutely eliminating the sheepy taste

One of Dr. Young's lambs less than 10 days old. Note the broad, fat tall and the curly fur.

Two young Karakule lambs, the larger one 2¼ months. The latter weighs 58 lbs. The curls have disappeared entirely and the black pigment oxydizes into brown which in six months will be gray, the color of the mature sheep.

Some of these lambs have already lost their curls. Others still show them. They are said to be hardy and a mighty interesting experiment.

characteristic of our mutton sheep, and found so distasteful by a great many of our people.

The Karakule accumulated in a very short time immense quantities of fat in his tail, and buttock, and these qualities are reflected to a large degree on the half and quarter breds making possible much quicker fattening, with a great deal less feed, as the Karakule strain improves their digestion.

As Karakule sheep are more like goats than sheep, when it comes to rustling and browsing, they should be introduced in brushy or timber countries. As Karakules develop much quicker than our sheep and it has been found that half-blood Karakule Shropshires attain the same weight at four months than ordinary sheep such as Merinos, Rambouillets and Shropshires do at six months making possible much earlier marketing. This together with a much superior mutton, with the sheepy taste eliminated, means, of course, much better prices for the producer.

Furs known under the trade name of Persian Lamb, Astrachan, Krimmer, Afghan, etc., owe their lustre and color to the Karakule strain, which makes them; the more Karakule blood they contain, the more valuable and beautiful are the furs, and the best of them are obtained by crossing Karakule rams to the longwool coarsewool sheep of Central and Minor Asia; also Southern European Russia. Tests made in various sections of the United States during the past three years prove conclusively that we can produce a much superior fur than Asia, and with much less Karakule blood, entirely due to the wonderful luster of our Lincolns, Leicesters, Cotswolds, and other longwool varieties of English origin.

Half-blood Karakule-Lincoln skins when three days old, and possessing great luster and very tight curls were priced by furriers at $10.00 and $15.00 per skin, and as the best of furs are obtained from the young lambs the first few days after birth, there is no objection of permitting the ewes to lamb twice annually, and if any of them die, the skins are in no way affected; this together with the fact that many twins are born on account of the Karakule strain, will give our breeders an idea of the greater profits in raising Karakule sheep. That in time we will produce furs that will bring even more than $10.00 is a foregoing conclusion.

The Canadian longwools do not only interfere with the natural luster of the Karakule family, but actually accentuate the luster of the Karakule without much disturbance of the wonderful velvety apeparance of the tight curled full-blood Karakule lamb skins few of which ever reach the market. Three-quarter breds and seven-eights Lincoln or Cotswold ewes when bred to half blood Karakule Lincoln rams or seven-eights Karakule-Shirazi rams produce splendid furs varying in price from $5.00 to $10.00 per lamb skin equal to those produced in Asia, and known as Astrachan and Persian Lamb, is not superior. The more luster the graded longwool ewe possesses, the more valuable is the skin. When American longwool ewes are crossed to Karakule rams the percentage of Karakule pigment does not make the same difference in this country, as it does in Asia, providing longwool ewes are selected possessing the most luster. The quarter-bred Karakule-Lincoln skins should bring nearly the same price as the half-blood, and the slight gray effect shown in some skins if anything enhances their value. Of course, it is best to use full-blood Lincolns and Cotswold ewes.

Black Silver Fox skins are worth in London about $3,000 per skin, yet any amount of Black Silver Fox boas and muffs are sold in this country for $100, which is not a bad price for a dyed dog skin with a few Badger hair inserted. The skins of Australian Hares and American Muskrats are so well dyed to-day that only an expert can tell them from genuine Seal, and many a woman has paid for a genuine Seal and is wearing an imitation that defies detection.

A Canadian breeder in New Brunswick says that he has three Lincoln and two half-bred Karakules that were bought up from Kamar. These had lambs last spring and all five were raised.

We have one full-blood Karakule buck on our ranch," writes Mr. Shanklin, "and at present we have four more, two pair, but we expect to ship them to other ranches in a few days. The full bloods that we have and handle are the product of part of the herd brought over by Dr. C. C. Young in 1908. We had two three-quarter blood lambs this spring. One of these had an average skin while the second one had a beautiful skin and retained its curl and lustre until almost three weeks old. This shows that lambs of the same breeding may have skins of very different value. It also shows what a great field is open to the careful breeder who will select the lambs with the best skins for breeding purposes. We have sold no skins from our ranch but skins from the same strain have sold on an average at $5.00. These were the skins of lambs that died which is really not a fair test to make. We know that lambs must be killed at the right time to get the best skins. When they die the skin may or may not be prime.

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The bazaar of Komrat, Bessarabia, where ½ and ¼ Karakule lamb skins are sold. They are called Persian Lamb, Astrachan and Krimmerlederchen.

The Campaign for Citizens

The Great Primal Instincts of Human Life are Touched in the Rural School by the Right Kind of Trained Man. Only Nature's Noblemen Should be Teachers. Is the State to Blame for Failure in their Ideals

By JAMES ANTHONY

The writer of this article has already established a wide reputation by his able lectures at Guelph on the Rural life problem. In this article he touches in a sensible way upon the real, vital issues in country life to-day. In a time when everything is being upset by a titanic war struggle, it is particularly urgent that every farmer and lover of agricultural work, seek to encourage and abet every movement for the improvement of farm life. Personal lives count far more than money chests, on the farm and in the rural school sections. Of course this is for the man and the woman who love the country.—Editor.

THE history of human progress has no brighter page than which records the heroic struggle which brought Denmark to an honored place in the front rank of modern civilization. In the dark days of the last century when she lay bleeding at the feet of her German conqueror and saw herself despoiled of more than a third of her territory it was no wonder that her hardy sons were stunned by the awful calamity that had overtaken them. Poor, broken, the best of her land in the hands of her spoilers, no one need have been surprised had her people and rulers surrendered to despair. Political prophets said her glory was in the twilight and they were right. But Denmark's twilight was the twilight that precedes the dawn. Her preachers and philosophers proved to be the watchmen who cried, "The night cometh and also the morning." The people heard their cry and turned their faces away from the past towards the future. They could not recapture the land stolen from them by ruthless conquerors but they resolved that the land that remained should be made as fertile as any land beneath the sun. They might not recall the sons whose blood had drenched the fields that yet remained, but they would do all that in them lay to give the boys and girls that remained and who should yet be born all that love and thought could provide in the way of patriotism, high intelligence, sound morals and the completest human efficiency.

The result is one of the wonders of the modern world. Nowhere does the sun shine upon a more loyal or a happier people than the Danes. Before Danish achievement in industrial efficiency the business world must stand with uncovered head. Denmark, more than any other nation in the world, is a nation of scholars. Illiteracy has been practically abolished. She is a nation of athletes. Better still, she is a nation whose citizenship is founded upon morality, religion, integrity, religion and all the broad and deep principles that tend to make men social and humane.

In the presence of an example so inspiring can Canada afford to remain in any degree idle or indifferent when there are possibilities for development so great that challenge her endeavors? That she has no intention of doing so is abundantly evident from the attention that is being paid to the inculcation of rational methods of education. Almost everywhere from Atlantic to Pacific the leaven for better things is at work. So far there has been but little need of intensive methods in any department of work, so relatively limitless have been her resources. Her seers, however, realize that with her occupation will pass the world's last great West and they are doing all that in them lies to secure her against wasteful methods in men or material opulence.

As an example of the work that Canada is doing for her citizens-in-the-making take the summer school of the teachers held at Guelph during the first ten days of last August. This conference was made up of delegates chosen to represent the County Teachers' Associations of the province. More than two hundred of these delegates were present at the meetings held in the O.A.C. buildings and on the grounds. The aim was to present to these teachers a large view of the educational needs and possibilities and achievements of rural communities. The method was a frank discussion by men and women actually in the work of rural leadership of the ways and means of encouraging and, if need be, of initiating the sanest methods of achieving the best life for the boys and girls and men and women of the farming communities of the province.

Dr. Mills, of the Railway Commission and ex-President of the Ontario Agricultural College, addressing a teachers' convention. He has been one of the big friends of farmers.

One feature of this conference was the quiet, systematic manner in which the workers were encouraged to take stock of the situation confronting the educational, industrial and social leaders of the Dominion. The fool whose wish is to run in, where a sane man fears to tread, was warned to get out on some other job than that of teaching a country school. The peripatetic pedagogue whose main characteristic is the wanderlust and the teacher whose eye was on the school in the big town or the city was shown that he was but a nuisance crying aloud for abatement. Not less to be despised is the teacher who holds aloof from the life of the community. With a beauty of diction and an earnestness of manner that none of his hearers will ever forget, H. W. Foght, Specialist in Rural Education, Bureau of Education, Washington, D.C., spoke of the value of the resident school master to a community.

In Denmark and in Scotland the schoolmaster is regarded as part of the community life. When a worthy man is secured for this work he is regarded as a fixture not to be removed except by death. He is a man of culture to whom the boys and girls may be safely intrusted for six hours in the day and for five days in the week. He knows the hopes and aspira-

tions of the community and acts as friend and guide to the youth who come under his direction. Part of his salary is paid locally. The remainder is paid by the state. In some cases he is paid as much as $1,900 per year. His school is a real country school. Its pictures and charts and its whole atmosphere is suggestive of the country. From the years of adolescense, the boys and girls are in attendance upon school farms and school homes where love of country as inculcated by story and picture and song, and the best things in the literature of the world and of fatherland are instilled by inspired and inspiring teachers. Together with this training goes education in the use of the agricultural and industrial arts. Meanwhile the child is not taken from home. The home finds the school to be her handmaid, not her substitute. From the time the child is sixteen, the boys for seven months in the winter time and the girls for five months in the summer time, attend the folk high schools where this same work is continued and the impressions of the previous years are broadened and deepened and still more humanized. The last touches are given to the development of the whole man. Fitness, efficiency in mind, in body, in heart, as citizens and as men and women are some of the ideals of those Danish schools that have made their land famous and to which the great world is already commencing to pay its well-earned tribute of respect.

COUNTRY LIFE MEMORIES LIVE.

Now the dissemination of this valuable doctrine is the object of this conference of the school teachers of the province. If a name must be given to this science it will be well to call it the Science of Country Living. The aim is not to teach the handcraft of practical farming. The goal is not to turn out plowmen and stockmen or dairymen, but to give the boys and girls and the youth of the land a conception of the greatness and human interest of the complex of the varied manifold that goes to make up rural environment and opportunity. Should the youth find that rural life is not his bent, he will still be bound to the soil by the mystic cords of memory and sentiment that will be severed only by death itself.

The whole appeal of this congress was to the lighting up of the student's spirit. And surely this is the work of the school. We may provide machines by our factories and foundries—machine-making should be left to factories and foundries, but it is the function of the school to enable the boy or girl student to bless the world with the best that is in him. In Canada, the state has made the unpardonable mistake of turning away from the child at the time when the child most needs direction, guidance and inspiration and sympathy.

BETTER CHARTS WANTED.

Till the dawn of the pre-adolescent age the child is not troubled by the mystery of his own existence nor of the big world around him. With adolescence he asks himself strange questions, and is oppressed with the unintelligibility of his

A crowd of summer teachers in July last at the stables of the Manitoba Agricultural College. Picture snapped by the Editor.

own and the world's being. In Canada these are the days when the state abandons the young voyager, allowing him to find chart and compass, to discover the use of the marvelous physical and mental ship in which his spirit is to make its voyage to the great beyond. When he asks regarding the port of entry whither he is bound, the state in Canada has hitherto not given him an answer. The aim of the new education is to come to the young sailor with the life story of other mariners who were perplexed to give him confidence that his own voyage need not be in vain. In this way the foggy period lying between childhood and citizenship may be passed without shipwreck, and the stigma that our rural schools are but sixty per cent. efficient removed.

In one of his fine addresses Dr. Mills a former O.A.C. president, but now of the Dominion Railway Commission, remarked: "The solution of the countryman must come party by way of the rural schools." The soundness of his contention is borne out by work that is being done already. At first the schools that were willing to adopt the new way of using the country educational machinery were few and far between. These with many a misgiving, undertook the task.

This year there are over four hundred at this work. Those who have tried it best see the most in it and are the most hopeful for the future. For example there is the work of the corn club in one of the schools in Essex county. In this school it was decided to place in the hands of the children samples of the best corn seed available and to have the children test these out on their parents' farms in order that the best variety might be discovered by actual trial under ordinary farm conditions. The Wisconsin No. 7 corn proved the winner. In that part of the province the farmers are now sowing this same corn and are following out the methods outlined by the Education Department.

O.A.C. NO. 21 BARLEY PREACHES.

When one recalls the results that have followed the introduction of the O.A.C. barley No. 21 it is easy to forecast what will come to the farmers who are out on their right of way with the new variety of corn. It must be remembered that the epoch-making barley was at one time a single seed. A still further evidence of the good wrought is the case of the boy in Renfrew county who had made up his mind to leave the farm, but who was encouraged to try another winter at school. Fortunately for him the teacher was interested in the new method of interesting the children in country life and by spring he was so taken with the experiments suggested that he asked his father's leave to have a share in the practical experimenting. His last word is that the country is all right, and that he is going to give it a fair chance before leaving it.

These are concrete examples that may be multiplied by the hundred. Inspiring as these are the real joy of having a share in rural betterment begins when the new way of looking at things is considered. It is a dark day when her people march to the chant.

MONEY CHESTS DO NOT MAKE MEN.

"The jingle of the guinea makes the whole world akin." Guineas have their place; but it was not the sight of a money chest that gave the world a Cromwell, a Milton, a Lincoln, or "The Cotter's Saturday Night," or the "Lord's Prayer," or the Twenty-third Psalm, nor was it the Midas touch that won Trafalgar nor Waterloo. The recent struggle between the nations that are said to best represent civilization gives ample proof that industrialism has nothing in it that makes it hard for nations to go to war or that stands as a bulwark between the common people and hard times. No, the only education that will bring a country to its own is the education that encourages men to ask why they make money or why they keep up the struggle with nature. Some

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Prof. Reek, of the O.A.C., lectures in a pleasing way to the teachers on animal husbandry. Some of these ladies are enthusiastic about farm animals, where formerly many girls thought it a crime socially to know a Clydesdale from a Hackney.

The farm buildings, general live stock and residence of Robert Doak, of Madford, Manitoba. When the author of this article first visited this section in 1898, there were very few evidences of such things in this district which lies north of the C.P.R. main line, just east of Brandon.

Prairie Fortunes in Livestock

President McComb of the Red Polls Talks of Farm Finances, Motor Cars, Livestock Possibilities and the Too Big Houses of Manitoba.

By F. C. MacKenzie

There is no more interesting story than that told by the splendid farms and loyal people in the the prairie homes of Manitoba. A magnificent future lies before the many men of this province. They have a grand soil, a healthful, vigorous climate, and opportunities for making over a bald prairie into a perfect rural paradise. By the use of trees, good roads, shelter belts, fine buildings and live stock, they can place the name of this part of Canada in the foremost place in countryside content. The writer has traveled through the many favorable spots where already some farmers are doing so much to make life here worth while. There are, though, some things to be avoided, and the frank talk given by Mr. McComb will be interesting to all breeders. In October issue, a description of a big Hartney farm appeared. In the December issue, there will be an article from the same writer about the Icelander as a farmer, in Mantioba, which will tell how big men do things.
—Editor.

ONE of the joys of farming comes from having accomplished something on your own farm, under your own management. This getting of results, and this estimation of the proper values to be put on soil, rainfall, cultivation, fertilization and rotation, makes to the farmer a never-ending wonder. There is no limit to the interest that springs almost daily from the soil. It is never monotonous. To the farmer who sees this succession of events, there is a constant iteration of joy spots. Where there is no vision, there we find a man misplaced in the world's division of labor. The farmer who does not see in his daily toil an unending succession of scientific physical and mental revelations, has missed his calling. He should seek another sphere of employment before the imps of despair and indifference make him over into a hum-drum drone or grumbling cynic—the curse of the agricultural countryside.

There are few such cynics in Manitoba. This new province has yet a big body of progressive, interesting and dignified farmers who are enjoying the fullness of life after the pattern set by John Burroughs or Joe Wing, and also are at the same time making their material possession progress in harmony.

BIG FARMERS EVERYWHERE.

Everywhere, in all parts of the Red River country, there are big farms and big farmers. Many are raising wheat and grain entirely, under a skilful management of their soils. Others are raising pure bred stock, second in point of excellence to none in the breeding world. Pure bred cattle farms are numerous. Horse breeding barns stand in red relief in all points of the Manitoba compass. Hogs are husky and fat, on many a wheat field and in many a popular bluff shelter. Sheep are getting in fast. Farmers like the one pictured in the September FARMER'S MAGAZINE, are scattered all over the land. Flocks of Oxfords, Shropshires, Leicesters, Southdowns and native range ewes are being carefully kept at many points.

Evidences of the increasing turn to livestock is seen by the carloads of woven fence wire that are being unloaded at the prairie sidings. Manure spreaders also, seen on the majority of farms, carry a tell-tale narrative of their own. Whitewashed livestock yards at every railway station are as essential now to the life of the prairie as wheat elevators and loading platforms. To sell a car load of cattle, a load of hogs, or a bunch of sheep is as much a matter of course now as it is in old Ontario. And every carload makes the feeder big money. It is to be hoped that the advice of Prof. Geo. E. Day, as given in the October FARMER'S, will prevail in these war times. It would be a bad dislocation of farm business to see the livestock sacrificed at this time for pure grain farming.

BIG MONEY IN LIVESTOCK.

Do not forget to breed stock and keep at it. For assuredly as night succeeds the day, there will be more money, in livestock than in wheat—and decidedly more of interest.

W. J. McComb of Beresford, is president of the Red Poll Cattlebreeders' Association of Canada. For a number of years he has been quietly breeding this grand dual purpose cow for the uplift of the people of his chosen habitat, and incidentally for the money there is in the business.

Seven years' itineracy on the show circuits of the West has made him fairly well conversant with agricultural conditions, farm finances, and social movements. As an enthusiastic breeder of Red Polls he has been rewarded by having now some really choice animals of the breed and having won the esteem of farmers and feeders over a broad area. Nor is the livestock breeder's business a mendicant in rags. There is good money for the honest, progressive breeder. Pure bred livestock breeding in the early days of this country's settlement was too often damaged by unscrupulous tricksters. But modern agriculture has learned the commercial lesson that honesty is the best policy and as a result we are getting the scrub purebreds weeded out to the feedlots and the prepotent ani-

The working horses of Robert G. Stewart, Griswold, Man. There is no doubt about it, horses are going to be high priced after the war.

mals kept to perpetuate the breed and the breeder's intelligence.

WHAT A SECTION CAN CARRY.

Livestock on every section of Manitoba can be increased tremendously, asserts Mr. McComb. On his 640-acre farm, which he purchased in the raw prairie state some 20 years ago at $6.50 and $10 per acre, he now has splendid buildings, good fences, and carries 50 cattle, 100 sheep, 20 horses and 12 brood sows.

Twenty-five thousand dollars would not buy the farm now and it is getting richer in its fertility every year.

One of the big drawbacks to this country for livestock breeding is the lack of fences. Woven wire is needed in terms of miles rather than rods, and permanent improvements like this take cash which the average farmer has not at his command. Consequently fencing propositions and for that reason livestock rearing goes forward slowly. Thus it is that thinking farmers see in the loan and credit associations that have been vigorously discussed, a way out of the difficulty. Of course it is realized that a farmer must have a certain valuation or standing upon which to get this credit. It is not in the nature of things to expect a man to come on to a prairie homestead and to expect financial backing for him to build up with permanent, even if productive, improvements without some guarantee that other undertakers of business will not have to come in and deliver up the principal.

CREDIT ASSOCIATIONS.

This personal responsibility is acquired by the chartered banks by means of local managers' judgments and collateral security. The credit associations must perforce do it much the same way and then the profits of the business can go co-operatively back to a reduction of the rate and to the payment of principal.

There are plenty of enterprising and stable farmers, said Mr. McComb, and all they lack is ready money.

80 PER CENT. OF FARMS MORTGAGED.

Mortgages are common in Manitoba. As high as 80 per cent. of the farms are mortgaged, and the most of these mortgages were obtained for luxuries, was the startling statement of this livestock breeder. The luxuries, he named were big houses, huge barns and high-powered automobiles. One man builds a big house and his neighbor must soon follow suit. Imitation and emulation are good laws for the elevation of morals and manners but in many cases judgment is divorced from the instinct, and the resulting bedevilment of a good rule ensues. This has been instanced time and again in Manitoba where big houses, insanely roomy, have been built on the prairie section. Neighbors, just as prosperous, and feeling their good fortunes just as keenly, must needs keep apace and so the twelve-roomed mansions grow and the infected area widens.

The manure spreader has entered Manitoba in earnest and the bigger yields tell us that that man who claimed that the prairie soils would not respond to it, has been flatly contradicted in the past year.

THE BIG EMPTY HOUSES.

The huge folly of it all is evident even now. As many as a dozen big houses surrounding Brandon were pointed out to me, as being deserted by their owners. Tenants occupied them and found them expensive in upkeep and much too large for their needs.

The original settlers often had big families and much hired help. The big house was the natural swing of the pendulum from the little, cramped, two-roomed shack of the pioneer hardship days. Judgment could not halt the impetuous enterprise and social conditions have perchance, to step in and teach the needed lesson.

FARMER'S MAGAZINE was seeking by a series of articles in past issues to impress upon the prairie farmer, and indeed every farmer the need of a more sensible style of farm house. Questions of heat, light, indoor labor and convenience, outlook, outside appearance and harmony must be considered and when such advice is brought up to reinforce the judgment, the big house has to be abandoned. Farming conditions have proven the big disadvantages of big houses and it will seriously hamper some sections for some time to overcome this unproductive expenditure.

A COSY HOME IS AN ASSET.

But money invested for a good house with conveniences for the wife and family is generally sound common sense. Many houses of more modest pretentions and with some of the bungalow advantages are being built now. These will always add to the value of any farm.

Automobiles are not always to be regarded as a luxury either. There is everything to be said in favor of the prairie farmer owning a motor car. In fact modern big farming conditions demand it—and the luxury criticism can only be leveled against the man who is sacrificing producing efficiency to vanity. I saw upwards of 200 cars at one time on the Brandon fair grounds, all owned by farmers. The same was true of Regina fair.

"But the salvation of this country is livestock," again repeated Mr. McComb. "Especially would I emphasize sheep as money-makers. I prefer the range ewes as they are hearty and good milkers. Cross these with good pure-bred rams and any farmer will soon have a profitable flock of hardy sheep."

This view is not shared by a neigh-

bor farmer, H. G. Thornton, south of Brandon, who claims that the pure-bred ewes make as good a foundation for Manitoba flocks as the range ewes, and that they take less time in getting one somewhere in the sheep business.

SHEEP MAKE $230 IN WOOL.

This latter breeder had bought ten grade Leicester ewes this past season, from which he had taken an average of fourteen pounds of wool, for which he had secured 17c. Thus $2.38 per ewe for wool, with the cost of keep nothing, meant easy money.

Equally rosy are the returns from prairie hog-raising. "I can sell,' says the Red Poll man, "live pigs at 6 and 6½ cents and make more money out of my grain than I can by selling the wheat in the market."

If this is so, and experiments have certainly proven the truth of Mr. McComb's words, then farmers who feed their grains are going to make more money than those farmers who depend on a changing wheat market for their returns. While markets may easily depress the hog markets, yet they are a feature of livestock work that can be regulated quite easily. But as for sheep, the opinion seems to be general, that the prairies cannot go in for them too much.

In fact the whole livestock outlook for Manitoba is a bright one. Production is so easy from labor, housing and feed standpoints, while markets West and East and over the ocean are awaiting all that can be raised.

PLENTY OF CASH THIS YEAR.

I was naturally anxious to know how cash was going throughout the prairie lands this year, following as we have so general a crash in real estate values.

The majority of the exhibiting stock breeders said that they had sold for cash this year as much, and in some cases, more stock than they had in any previous year. All were unanimous in commenting upon the demand for livestock all over the West. If paper were taken as extensively as usual, every animal in the show rings would have been left behind. A representative of a trust company at Regina told me that payments on principal never were better.

Farmers are paying off mortgages instead of speculating. Buying livestock would be a better investment.

Of course, it is with cattle in general and Red Polls in particular that Mr. McComb is particularly at home.

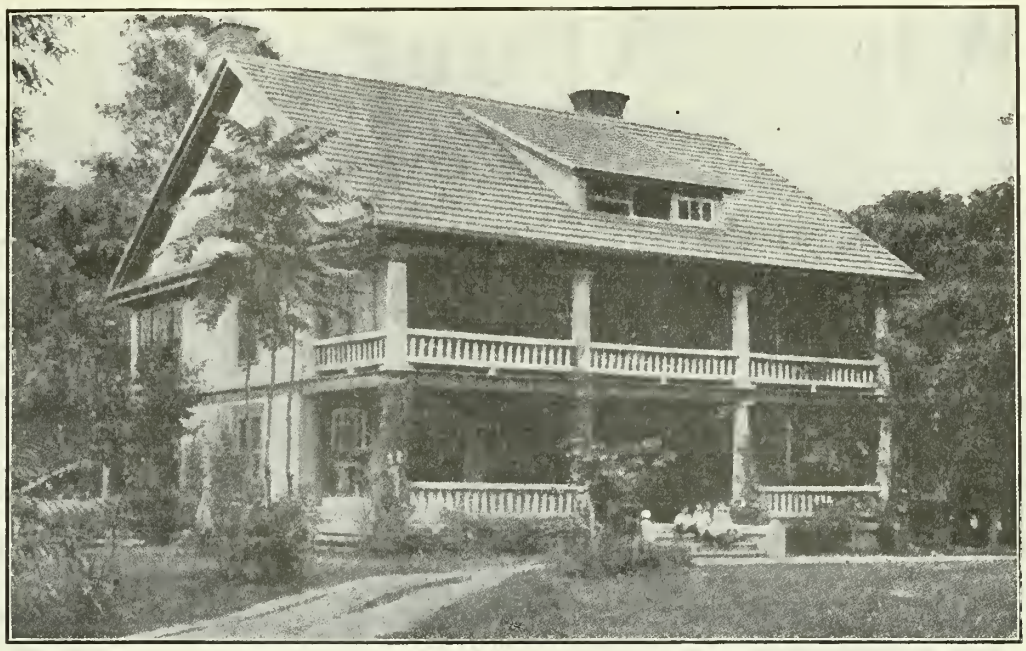
This excellent breed has completely captivated his fancy as a dual-purpose animal for the prairie farmer. The Red Poll is a good milker, and an easy feeder, growing to maturity quickly and making extra choice beef so experts say. The big bull at the head of this herd was only fifteen months old and yet it had not been nursed by its mother or any other cow for over three days.

These cattle are all red, slightly smaller than Shorthorns, of quiet disposition and in every way admirably adapted to prairie conditions.

Pioneer farming and mixed farming operations demand a cow of this type and the possibility of a dual-purpose cow is evidenced in the Red Polls every day.

Mr. McComb came to Manitoba twenty years ago from Hastings county, Ontario. He brought very little cash with him, but his love of cattle and in fact all livestock, has helped to make for him the big valuation he now has around him at Beresford.

And our prosperous farmers are the big assets of our business world. It is they who make the demand for goods and where productions float the world's business. A wise Government will build up the farm, and encourage rural enterprise.



Joe Wing's house at Woodland farm, Ohio. This man's gospel of alfalfa is spreading fast to Manitoba. Deputy Minister Bedford has caught the same spirit also.

HONEY OUTLOOK.

The honey situation in Eastern Ontario is bad as little has been made. Western Ontario has fared somewhat better. On the other hand British Columbia has the largest crop in her history states F. Dundas Todd, one of the provincial bee inspectors. Certainly in the matter of honey, war conditions will not affect the prices adversely to the bee-keepers.

The farm of Frank Brooks, north of Chater, Manitoba. Here, wheat, sheep, cattle, horses and pigs join handsomely in the money-working returns.

What About Our Roads?

By Harris K. Adams

THE building of roads has come into prominence this fall in a stronger way than ever. And while this matter has been hastened, no doubt, by the increasing use of automobiles, yet the value of a good road to enable the farmer to transport his products to town or to a shipping point is becoming increasingly emphasized in every community.

Then again the heavy automobile traffic on the leading country roads has furrowed and destroyed roads that were considered good ones heretofore. Now after every rainstorm the mud holes and general depravity of the surface, brings home to the township ratepayers the real condition of things.

Farmers, themselves, are becoming users of the auto and the auto-truck. Nothing so converts a man into an advocate of better roads than to become a motor car owner himself.

In the early days of the country when teaming on country roads, to county towns and to shipping points, was more general and covered longer routes than they do to-day, the mud was overcome in many cases by the use of plank. Plank roads stretched for miles and the teams from all directions deployed to this highway. So that the traffic on it became almost one continuous procession of heavily loaded wheat and grain wagons. Good roads meant the hauling of nearly double the weight and farmers could easily see the advantage of road improvement.

This Road is Impassable!
Not Even Jack-assable!
If you Would Travel It,
Get Off and Gravel It.

Such a legend, it is said, was read on a Western road sign, before a particular piece of bad road. The skit was quoten off by Col. Farewell, of Ontario, before a recent deputation to the Provincial Government, asking for aid in reconstructing and maintaining the old Kingston road east of Toronto.

The road question is a mighty big one for Canada. The through traffic now occasioned by the general use of automobiles as well as the necessity for better roads for the carrying of produce from the farms, has accentuated the needs. And the working out of a system rests upon this Provincial Government. This article begins a series on road construction and maintenance that will materially assist our readers. Let it be granted, though, that good and better roads are a necessity. Something has got to be done.—Editor.

To-day, the farmers who object to expenditures on roads, do so for other reasons, and not because they do not enjoy the pleasures, comforts and energy-saving benefits of better roadbeds. They reason that the automobile users chiefly from other municipalities, especially the cities, do the most destruction to the surface metal, without bearing any proportion of the cost of building and upkeeping of these roads. Moreover, whenever a roadway is made into first-class condition, the guide maps find it out and the farmer's slower-moving vehicles are crowded off or are at a disadvantage.

Both these arguments have had much justification for their use. There has been good reason for the demand that autos be taxed for road improvement and that the tax revert to the municipality. That the farmer's rigs are crowded off, although in some cases deplorable, is an argument that must be overcome in the future by the sheer weight of competition and the survival of the fittest under better state regulation of traffic.

The number of automobiles owned by farmers on the prairies and in the fruit sections of British Columbia is steadily on the increase and the objections of farmers in the East do not prevail at anything like the same extent.

There is, perhaps, no better place for the motor car, than on the prairie farm. Good dirt and gravel roads, easily kept in shape by means of the ordinary road drag, make life so much more pleasant for prairie farmers. In many sections they grade up their roads, and metal them well, which with a minimum of attention, soon become excellent highways.

In Eastern Canada, the question is a more difficult one. The soil is often a clay that is hard to properly drain, and although the road is turnpiked, it assumes the nature of a bog with the spring and fall rains. Even where gravel metalling has been done, the traffic furrowing in deep ruts into it, allows water to get in and the damage is done.

It becomes then a question of a system of financing and control for it is patent to all that the statute labor system of local construction has failed. Strange as it may read, farmers show a sublime indifference to putting in honest effort to the bettering and to the upkeep of their own roads. The idea has prevailed among too many farmers that roadwork was work for the King and to be gotten rid of and over with as quickly as possible, with little outlay on their part. Such an attitude is, of course, a wholly unfortunate one in a democratic country, where the people are really the masters of themselves. A higher moral sense in the democracy, is heartily to be desired. Its absence is no doubt due to the inherited "coloring" of mental attitudes that has survived the Divine Right days of the Stuarts, which is at present in its modern militant form in Prussian overlordism.

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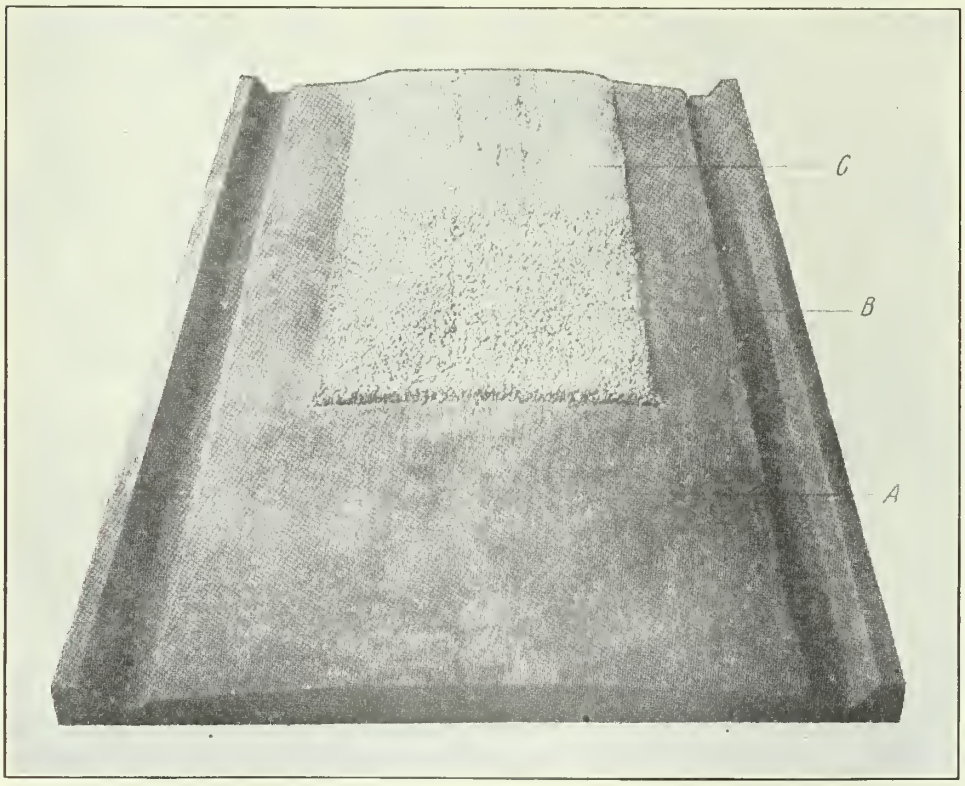


There is nothing else to it, we must construct our roads right or else the upkeep cost and waste will be enormous. Drainage comes first. Then a good, hard bottom must be laid. On the top there must be a good metal, well bound. Above all and more important, there must be regular and competent superintendents all the time. This road business is going to be a difficult nut to crack for our Governments. A law that would make every farmer use the road drag, and that would extend the pathmaster's duties over the whole season so as to have him repair holes and use preventive measures at the proper time would go a long way to aiding us for the present time.

Farming Diversified or Specialized

Just now there may be a tendency among some farmers to forsake their old ways of mixed farming. Especially will this be true by those farmers where grain can be raised best. We believe this will be a mistake. It will never pay them. The man who has several ways of making revenues will be the man who will be best off. Live stock, dairy products, poultry, vegetable and fruit products are going to be in big demand. With the world disturbance now going on, no man can tell from what angle the new demands will suddenly spring, and he will be best fortified who stays by the good mixed farming business.

In this, the corn silo and alfalfa will play an increasingly important place.—Editor.

By F. E. ELLIS

WHAT type of farming is the most profitable? As I review the methods of many farmers with whom I have been intimately acquainted, I find that practically all of them fall into one of three classes—the farmer who makes a specialty of some one thing, his neighbor who practices general farming, "a little of everything and not much of anything" as we say, and last of all, the man who aims to make two or more departments of the farm yield the bulk of his income, supplementing it with several minor money-making sidelines. Perhaps I cannot describe these three types better than by taking examples of each class that occur to me and in telling of their methods and success, or lack of it, making clear the desirability or otherwise of the methods followed.

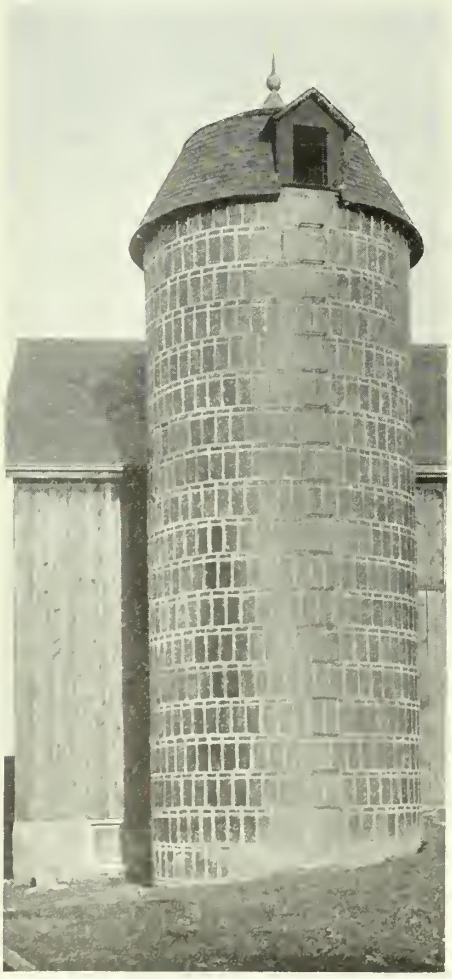
Williams was the specialist. Williams is not his real name, but he is a real farmer and represents a very large class. He had the idea that only the specialist could hope to succeed in this age of highly specialized industry. He believed that the methods of the factory could be applied with equal success on the farm—"my factory farm" as he was pleased to call it. "One thing at a time and that done well," was a favorite saying on his lips.

Williams specialty was milk, whole milk for the condensory. Outside of a few calves which he sold for a few dollars each at birth, he had no other income than the monthly milk cheque. He had a good farm and one well adapted to his purpose. With slight remodeling the buildings as he found them made a capital home for his herd of dairy cows. The cows were picked up at auction throughout the country and they were good ones. No one knew better than Williams the points that indicate milk-making ability in a cow. The haul to the condensory was short. The pond from which he secured his ice was on the same farm. All seemed to be going well.

One year after he had purchased his farm Williams' milk cheque was the largest issued from one of the largest condensories in Eastern Canada. In a couple of years, however, it became known that our specialized dairyman was not satisfied. "It is this way," he explained to me about the time that he announced his decision to change his ideas and his methods of management, "if I take a decent wage for myself as superintendent of this farm and the best milker on the place, I have nothing left for interest on investment. If I take five per cent. on the money I have invested I have nothing left for wages. That's not good business."

Williams is still farming, but he is no longer a specialist. He is too good a business man to remain tied up to an unprofitable theory. A little close figuring showed where he had made his mistake, neither his capital nor his labor were being used to the best advantage. This is only possible under a more diversified system of farming. Williams has now joined the third class of farmers that I have mentioned, the ones who direct their main effort towards the production of a couple of staples and as many sidelines as they can handle without inconvenience to the main lines.

"My greatest trouble in my specialized dairy," I once heard Williams say, "is to find constant and profitable employment for my help. It requires more men to milk the cows than it does to care for the cows between milking and raise the crops to feed them. But if I have been worried to find work for my men it has been a greater problem yet to find work for the horses. If I had a wife who could milk and a half a dozen half-grown kids who could manage a cow or two each, I might get along all right. As it is, I have to employ all the labor and once the cows are attended to there is nothing left to employ it on."



A hollow brick tile used on the farm of Frank Cockshutt, near Brantford, Ontario. Its appearance is pleasing.

Williams' trouble I believe is one that is general in dairy districts and it accounts in large measure for the refusal of farmers to specialize even with all the advice that has been given them in that direction. Williams first attempt at diversified farming was the addition of ten acres of potatoes to his usual list of crops. He grew these, harvested them and marketed them without employing an additional man or an additional horse. As soon as they were dug the potatoes were stored in the cellar of the house. They were sorted, bagged and shipped in the winter, thus distributing the labor over the year. Gradually, our one-time specializer has extended this branch of his farming operations until he is now conducting a wholesale truck business, producing such staple products as potatoes, early and late, carrots, parsnips, beets, cabbage, pumpkins and so forth. He tried strawberries, but found that picking came at a time when other farm work was rushing, so they were dropped. Bush fruits, however, have nicked in well with the other work and the area planted to these is being increased.

All of these products are shipped to wholesale houses and commission men. They are taken to the station on the same rig that takes the milk to the condensory; hence they do not represent any additional expense for carting. All of these crops are grown on the same farm that had formerly been devoted to dairying; hence the investment in land is no greater than before. The added investment in equipment made necessary by the new departure did not amount to over $100, the most of it going for special machinery. Very little additional help is required.

The advantages of the new system are obvious. The income has been very considerably augmented. Labor, interest and superintending charges, which had formerly to be charged up altogether against the cows, are now divided over two departments with the result that a profit is shown from both, a result never achieved when dairying was specialized in.

There are many farmers who call themselves specialists who really are following a diversified system. It is this class of so-called specialists who have done more than any others to popularize one-line farming. Only a few weeks ago, at a farmers' picnic, I listened to an address

The idea of the twin silos is coming in fast. We must have summer feed—cement gives good results.

by a well known Eastern Ontario dairyman. The whole tenor of his talk was "specialize, the more the better." He referred frequently to the success that has been his and dated his ascendancy as a successful farmer from the year when he gave up general farming and became a specialist. He had bought his farm and paid for it, he said, because of specialization.

His arguments seemed conclusive, but, metaphorically speaking, "there was a nigger in the woodpile." Only a short while before that same farmer had given me an itemized account of his income. Here it is:

Milk (approximately)	$1,200
Six yearling Holstein bulls @ $100	600
Three cows @ $225	675
Hogs marketed	400
Total	$2,875

It will be noted that this so-called specialist had two main sources of income and an important side line in his hogs. Had he been a specialized dairyman as he claimed to be his income would have been $1,200. But he is not. He has two separate and distinct departments on his farm, the production of commercial milk and the breeding of pure bred Holsteins and of the two the second is the more important and profitable. I find that most successful dairymen who claim to be specialists come in the same class with this man and instead of marketing the one product, milk, they market two, milk and cattle.

I believe that even the breeder of pure bred cattle can improve his financial status by paying attention to the growing of special crops for sale. A few years ago I visited the farm of that well known breeder of Holstein cattle, Mr. James Rettie, of Norwich, Ont. I went there only to see Holsteins. Holsteins I found occupied the place of first importance, but Mr. Rettie also pointed with pride to a splendid field of wheat for which the local miller had already contracted, to a large field of second growth clover intended for seed and did not forget to call my attention to a couple of good colts and a fine litter of pigs, all of which were intended to supplement the generous income afforded by the Holstein herd. Mr. Rettie has made his reputation in one line, as a breeder. My observations on his farm convinced me that the success that has enabled him to become the owner of three farms since he landed in this country a quarter of a century ago with only the clothes he wore, has come from intelligent diversified farming.

But if specializing in livestock is dangerous, specialization in crops is worse. There is still much truth in that old proverb, "Don't put all of your eggs in one basket." The growers of the Niagara district, who have planted all their land to peaches, have this year a new appreciation of the dangers of too intense specialization. Only recently Hon. Martin Burrell, Dominion Minister of Agriculture, described the conditions of many of the grain growers in southern Saskatchewan as "truly desperate." These men

Every diversified farm has a cat. The boys and the girls know the value of pussy.

have placed all of their dependence on wheat. The drouth has taken all of the crop and they are now face to face with starvation. Had they developed livestock along with wheat-growing they would not now need to appeal to the Government for aid. The potato-growers of Aroostock, Maine, I am told, sometimes retire to Florida for the winter and at other times live on short rations at home. It all depends on how their one crop, potatoes, pans out. I can only depend on hearsay in this instance, but I have it on good authority that even in Aroostock the most prosperous farmers are those who have gone in for diversified farming with potatoes as their main crop.

I now come to my third class of farmer, the one who grows a little of everything and not much of anything. He is at the opposite extreme from the specialist and if anything his methods have not as much to recommend them. My old neighbor, Johnson, is typical of the class. The old rig that draws his produce to market has been in need of replacing for the last half-dozen years. The harness on the old team consists principally of hay-wire and binder-twine. There is a lack of prosperity about the whole outfit that reflects the condition of Johnson's business. Johnson has a few cows, a few acres of grain to sell, generally oats or rye, a small flock of poultry (attended to by Mrs. Johnson), a few hogs are turned off annually, a few apples are sold and occasionally he does a day's work for a neighbor with his team. And yet Johnson has a farm that naturally is good and would yield a good living to its owner under right management. The trouble is that his mixed farming is purposeless farming. Even the best manager cannot spread himself over a dozen different departments, few of which can be considered more important than the others. Johnson isn't pushing any particular line, he can't push them all, consequently all are neglected. I believe that for the man of average executive ability, carefully planned, effective work is possible only where the main effort is directed along two or three main issues, preferably two.

Specialization may be excellent in its place. A certain amount of it is good on the farm. But let us not run away with the idea that a farm can be run on the same basis as a city factory or a wholesale store. If the subject were to be thoroughly investigated, I am certain that in at least nine cases out of ten the diversified farm would prove the more profitable.

SNAKE FARMS.

Two snake-infested countries, India and Brazil, maintain "snake farms" at which a scientific study of serpents is being pursued. The venom from the poisonous ones is extracted and made into serum for curing persons who have been bitten. The Brazilian institution, situated near Sao Paulo, is maintained at an expense of $40,000 a year. Besides preparing serums, the "snake farm" tries to spread knowledge about snakes and induce farmers not to kill them indiscriminately.

This silo, made and roofed largely by farm labor, received this year one of the best corn crops in the history of the farm. The cobs were nearly ripe when they went in and no frost occurred up to Oct. 26 in this Ontario district. The silo means big money to the owner.

Women's Work in War Time

How the Women's Institutes and Individual Farm Women are Helping to Relieve Conditions at Home and Abroad.

By ETHYL MUNRO

Everywhere in Canada to-day, on the farm as well as in the cities, the cry is heard for women's help to relieve the suffering at home and at the front. The women have not been slow to respond. The splendid spirit of the European women prevails in a degree here, and not until the struggle is ended will the women let personal interests interfere with the desire for universal helpfulness. This can be worked out in a great many ways—the individual knows her own case best, but this article draws attention to some of the needs that are present with us now, and cannot be ignored.

"THE wheat," said the Premier of France in his appeal to the patriotism of the peasant women of this nation at the beginning of the war, stands unreaped, and the time of vintage approaches. I appeal to the hardihood of the women of this land, and to that of your children, whose age alone, not their courage, holds them from the fighting line. I ask you to guard the life of our fields, to gather this year's harvests left unfinished because our farmers have become soldiers. I ask you also to prepare for the harvest of the coming year. You cannot render a greater service to your country."

In response to this call, to-day are seen the blue frocks of the peasant women in the fields, the vineyards, the gardens. They are helping to garner the wheat, to bind the fruit vines to the wall, to care for the cattle. Nowhere in France, Germany, Belgium, or Russia, do we hear of the women seeking to emigrate to avoid the war perils of their country. There are no deserters from the desolate firesides; the women are not only holding their homes for the sick and wounded, but doing valiantly the work which has been left to them as a legacy by the departing soldiers. The only homes vacant to-day are those ghostly houses in Belgium and France where the husbandmen are still in the trenches, where the fields are red beds for the dying invaders, and where the women and the children and the old men have been made aliens in their own land. In comparison with these the women in Canada, except those whose sons or husbands or brothers have gone to the front, are indeed fortunate.

While we know that war means destruction and agony and to a certain extent demoralization, that it represents the life of the garrison, and the tax-gatherer, the fact remains that it is here, and that it has been inevitable. In her appeal for help for Belgium, the recognized hero among nations, Mme. Vandervelde says: "We are fighting for the dignity of humanity, and that one nation may live in Europe without being under the heel of others." The only question for women is "How can we best help?"

A RENAISSANCE OF KNITTING.

In the country districts, as well as in the cities the women have responded nobly to the needs of the soldiers. The Women's Institutes of Ontario alone have already contributed in money over $5,000 to the Hospital Ship Fund and $12,000 to the Red Cross Work, as well as pillows, blankets, bedding, nightshirts, bandages, etc., for the hospitals, and shirts, socks, mittens, etc., to go to the front. There has been a renaissance of knitting and all through the province the societies are distributing wool to be made into the "smooth socks" that the army is imploring women to send—the kind that won't blister on the march. The money contributions from the New Brunswick Institutes where the work is new, have already amounted to nearly $1,400. In some of the branches, the money that had been put aside for the purpose of having programmes printed was used to buy yarn. At one branch the women have bought quantities of cotton by the web, and they meet every two weeks at the home of the president to cut out night shirts. In British Columbia a Women's Institute Patriotic Fund has been started and the societies have organized sewing clubs to make comforts for the soldiers. The same helpful spirit prevails throughout the Dominion. The Homemakers' Clubs in the prairie provinces are contributing liberally except in districts where the failure of crops has made it impossible, or where the charitable work in their own locality requires all their attention—a matter which will be of no little importance this winter.

THE CASE OF THE UNEMPLOYED.

Along this line a special appeal to farmers' wives is being made by the Settlement Workers and Local Councils of Women in the cities, that they give homes to girls and women who have been thrown out of work by the industrial depression. Some of these women have experience in domestic work and would give their services for very low wages; others are unskilled and would work for nothing but their board. To farm women who want help this scheme would be worth while. In any case it is an appeal not easily to be ignored by the well-to-do farm family who can understand the position of these girls.

From the superintendent of Home Economics Societies in Manitoba the following appeal is being sent out to the country branches throughout the province.

"You are no doubt aware that on account of the war there is a general business depression throughout Canada, and in consequence thousands of men and women will be out of employment this winter. Every home in the Dominion will feel the effect of this disastrous war to a greater or less degree. Most of us, however, have our homes and our friends and will not feel the actual pinch of poverty or the despair of friendlessness.

"Many of the unemployed in Winnipeg are young women who are not only alone in a strange country, but have been working possibly for comparatively small wages until such time as they should be established and have proved their worth. Some of them have been not only supporting themselves on those wages, but have been sending money home to relatives dependent upon them. Now has come this curtailment, and unfortunately it is always the one who has the least who suffers most. Some of these young women are well educated. There are several kinds of work which they can do well if they had the opportunity. They have been filling satisfactorily positions as stenographers, saleswomen, waitresses, etc., but many of them are equally clever with the needle, are qualified to teach elementary subjects, have an aptitude for practical nursing, or are competent cooks and housekeepers. They are self-respecting women who, through no fault of their own, are out of employment in a city which, because of the same business depression, has practically no work to give them.

"The Department of Agriculture desires to assist the unemployed in every possible way, and being especially anxious to help young women, has devised a plan in which co-operation and assistance are solicited from every member of the Provincial Home Economics Societies.

"There is generally work in the country home for which the farmer's wife can at least offer a comfortable living. There are, without doubt, in every community farmers' wives who would gladly provide a home during the winter for girls who are willing to assist them in the work of the house and many would be glad to pay wages. This mutual exchange would provide a splendid way for members of Home Economics Societies and all women in rural districts to help others and at the same time to help themselves.

"In some homes there may be a daughter who, if she could be spared, would attend the Agricultural College this winter and to take advantage of the course in home economics, but because her help is indispensable she is unable to leave home. Among these unemployed girls in the city there must be many who would gladly

relieve the daughter of her share in the work for some remuneration."

BACK TO THE OLD ECONOMIES.

In view of the pressing demands from so many quarters, a new economy is demanded of women, rather it is demanded that we go back to some of the beautiful economies our mothers practised. Less than any other class are farm women given to extravagance, yet it looks as though a lot of farm produce would go to waste this year, and the whole season's crop will be needed before the winter is over. Last week I went to Macdonald Institute and found Miss Watson drying apples and making cider apple-sauce for the Belgians. It worried her to think of the apples in the college orchard going to waste, and she believed in teaching the girls economy through the practice of it. The canning of vegetables and the home-curing of meat on the farm is more necessary than ever this year.

THE FOOD EXPERT SOLUTION.

In town, however, the cost of food is a more difficult problem. There will have to be a good deal of cutting out in many bills-of-fare this year, and a certain amount of it will not be harmful, either. In answer to the question: "What shall people eat in war-time when prices are high?" Dr. Wiley, the pure food expert, said: "Eat little meat. Make the principal food cereals, fruit and vegetables. Eat eggs for breakfast; they are a cheap food and the best that can be obtained. Whole corn mush makes a most nourishing food, and whole wheat is always desirable. With wheat at a dollar a bushel it figures but little over one cent and a half a pound. A pound of wheat has twice as much nourishment as a pound of meat, and it does not take much of a mathematician to figure that it is far cheaper to eat whole wheat products than meat. With whole wheat, milk, vegetables and apples, there is need of little else, although most families would try to have meat once a day. The public does not realize the value of apples as a food and at this time they are especially cheap. They serve not only as a food, but as a medicine as well."

Another way in which the farm mother whose family have grown up, could help to relieve the suffering in the cities would be to take a look through her clothes-room at the things the family will never wear again, or could do without. The missions, Salvation Armies, and settlement workers can make use of any amount of these things this winter.

The greatness of the need is beyond description. It is time that we put away all the little strifes, all the little prejudices, all the little warfares that make real helpfulness impossible, and fall in line wherever we can do the most good.

School Lunches

How Much Does the Progress and Health of the Kiddies Depend on the Dinner Pail.

By EVELYN ENDOW

We have here a very practical talk on a subject of vital importance to every mother whose children attend a country school. The school lunch, especially for children who have an early breakfast and a long walk, has more to do with the general health and mental progress than most people think. It is of more consequence than the noon meal for the adults at home, and more difficult to plan and prepare. Every mother will find these ideas worth thinking about.

MANY forces are at work to-day to improve the human race—No one can deny that it needs improving when one looks about and sees those mentally, morally or physically weak. Some say that we lay too much stress on the physical improvement but if the people, who believe this, would only read the results of scientific discoveries of the day they would see that many mental and moral disorders are caused by physical infirmities. A French doctor testified the other day that he had cured many mentally weak by injecting the substance from the typhoid glands of sheep; other mental diseases have been cured by operations such as removing pressure on parts of the brain and so on. Many criminals have been made by a mental disorder which resulted from a physical cause. Many crimes have been committed by people physically weak from diseases caused by improper food. Minor wrongs have been done very often by both adults and children when merely hungry or overfatigued. Think for yourself and remember the times you have been cross, dissatisfied and so on and see if there was not some physical cause which helped you to act that way, such as lack of food, lack of sleep or lack of proper exercise. Think again and see if when you had those physical discomforts, you could concentrate your mind and do your best work under these wrong conditions. Well, if it is hard for you to work under these adverse conditions, how much harder must it be for little tots who so often work at school in uncomfortable seats, bad light, and badly heated rooms and worse still with improper food or no food in their little stomachs.

So if we want children to do their best at school and home we must attend to their physical comforts. It is important that they have a warm nourishing breakfast before they leave for school but this is not hard to provide with cereals cheap and milk usually plentiful on a farm. But what about the lunch they take to school? They have walked usually some distance and they have worked all morning. Can their little minds do much work in the afternoon if they have a cold insufficient lunch? Is it the best thing for their growth to have the long day without hot or nourishing food?

HOT LUNCH IN THE COUNTRY SCHOOL.

The problem of obtaining something hot for lunch is a big one to work out in a country school. The ungraded school provides much work for the teacher at any time, but if she will help solve this problem, I am sure she will be well rewarded by the improvement in attention in the afternoon and eventually in the greater progress in their studies. But this problem needs the mothers, trustees, and others to help work it out. It seems to me a problem well worthy of the attention of the Women's Institutes. At present they are nearly all busy with Red Cross supplies but some day soon I hope they will vie with one another in trying plans to provide the school children with at least something hot during the colder months. I am sure it would increase the attendance in cold weather for one cannot but wonder what education a child can get who stays away every cold day as is commonly done in some districts.

In the city schools it is much simpler to provide the children with one hot dish at little cost. The schools are, as a rule, provided with a Domestic Science teacher. Under this teacher, in many schools a class prepares a quantity of some hot nourishing food, as cocoa or hot milk soup and this is sold for a cent or two cents to any staying for lunch. The domestic science teacher or a senior pupil oversees the selling and washing up. It is needless to say that the teacher must be a good disciplinarian to work this out successfully.

In a country school there is lack of equipment very often lack of experience in cooking, or teaching cooking on the part of the teacher, although most normal classes include domestic science lessons at present. In the Macdonald Institute in Guelph, there is a very simple equipment which has been worked out for teaching cooking in country schools. It is inexpensive compared with the rooms equipped in a town school. All the equipment can be kept in two small cupboards. The tables fit on the desks, the coal oil stoves are simple and safe. Full particulars, I am sure, will be sent you if you apply to Miss Watson. It would be a very worthy thing for the Women's Institute to provide where a school board lacked interest or thought they had sufficient expense. Of course it would entail greater work on the part of the teacher but then—most things worth while entail a great deal of work. The busy mothers would prefer this arrange-

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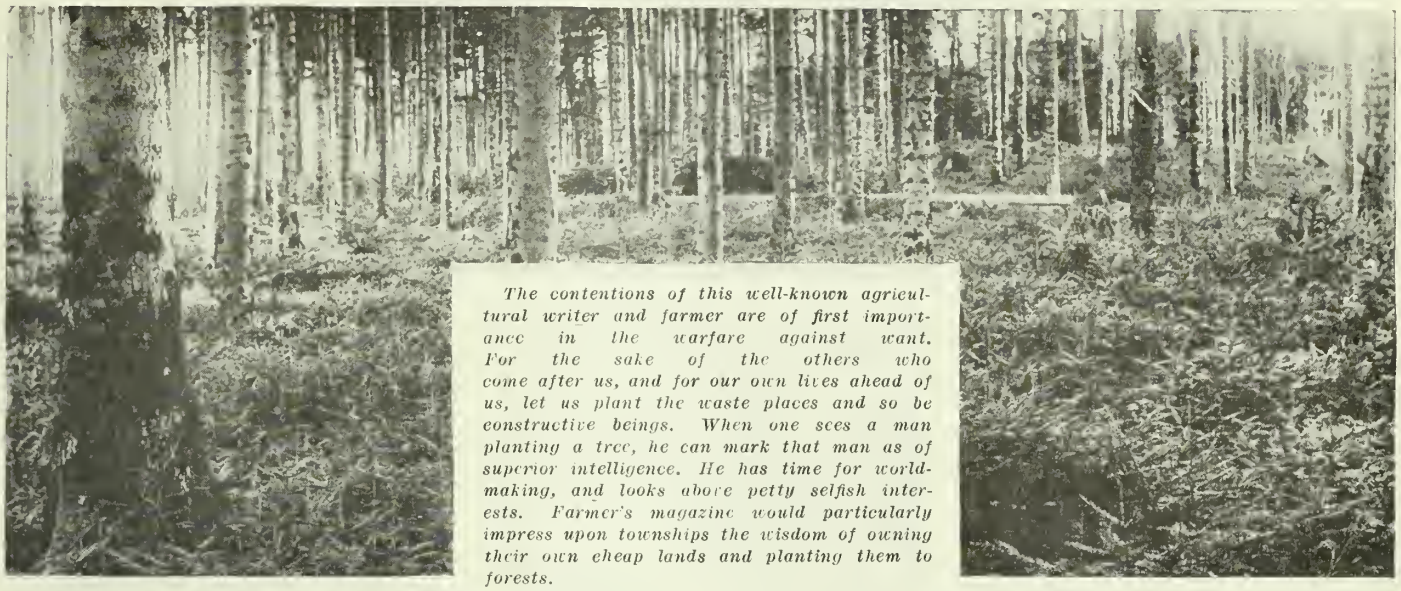
Tree Ramparts Against Famine:

By W. L. SMITH



The contentions of this well-known agricultural writer and farmer are of first importance in the warfare against want. For the sake of the others who come after us, and for our own lives ahead of us, let us plant the waste places and so be constructive beings. When one sees a man planting a tree, he can mark that man as of superior intelligence. He has time for world-making, and looks above petty selfish interests. Farmer's magazine would particularly impress upon townships the wisdom of owning their own cheap lands and planting them to forests.

A Triple Insurance Given by Wise Forestry Work on Canadian Farms. Why not Townships or Country Municipal Enterprise be Encouraged?

CONSIDERABLE areas of Ontario will if not restored to forest conditions by the hand of man, speedily develop into sandy wastes that will be an injury to themselves and a menace to surrounding lands now yielding excellent crops.

Almost all sections of the province are exposed to the danger. In the ridge which crosses Darlington, one of the best townships in the province, there is a strip of sandy soil which when the land was first cleared, was covered with a thin layer of decaying vegetable matter. For a few years this layer produced excellent crops, gradually, however, the deposit of the centuries was exhaused by continuous cropping and eventually the sand began to show through the surface. Wherever this occurs the sand commences to drift and the space thus made barren steadily widens. I was shown last spring a large field in this Darlington ridge, the man who showed it to me said he had cut an excellent crop of grain on it not many years ago. To-day the fences are down and the whole field is blow sand. In the neighboring township of Clarke four years ago a little knoll of bare sand appeared in a field of this pasture. You could then have covered this bare spot with a wagon box, to-day the spot is acres in extent.

North of Barrie you may find similar conditions. There is probably no richer soil in the province than that formed by the deposits along the valley of the Nottawasaga River. But, nearby some of the richest of these soils, are sandy locations. Here again the sand is becoming more and more exposed by the wearing out of the deposits of vegetable covering and stretches of blow sand are developing which threaten to cover with their drift, much of the really rich soil near by.

Down in Prince Edward, the county known all over Ontario as the home of Uncle John Hyatt and the centre of the biggest development in truck farming to be found in the province, something still more startling may be seen, or at least might have been seen a few years ago. During a visit to the "Sand Bank" in that country some years ago, I saw a farm home against which a sand drift had formed to a height level with the kitchen windows.

These are not isolated cases. In Lambton which hopes to rival Niagara as a peach center, sand drifts are forming. In Norfolk which Jim Johnson has pushed to the front among apple counties, miniature deserts have been formed on what was once considered good farm land. Here and there all over the province it is the same.

One of Mr. Smith's young trees that has been out two years. Photo taken by his daughter.

The pioneers who cleared away the forest performed a service the value of which we, of to-day are incapable of estimating. But for the toil which they endured amid grime and smoke, the Ontario of the present would not exist. In rendering that service, however, the pioneers made serious mistakes. Land which should have been allowed to remain permanently in forest was cleared of its timber. Sandy and gravelly ridges and stony hill sides wholly unfit for cultivation, were stripped bare of the covering which Nature had placed over them.

The mistake was not an unnatural one. When the whole country was covered with timber what is now our best land, was low and boggy. The hilly or broken land alone was dry, naturally this latter was selected for the first clearing especially as stones and sandy subsoil was hidden beneath the vegetable deposit left there during the centuries which passed before the white man came.

WHY WELLS DRY UP.

There is nothing to be gained by lamenting over the mistakes of the past. Our duty is to face conditions as they are and make the necessary improvements therein. These conditions are not only in the danger of sand drifts to which I have referred. We are also subject to the constant danger of destructive wind storms, the force of which might be checked by

tree-clad ridges. Our streams are drying up because of the removal of trees from their banks and sources of supply the rainfall has become deficient and uneven by the change in atmospheric conditions due to the stripping of the land of its timber. As a consequence of this, again, vegetation suffers in summer and the difficulties in the way of obtaining a sufficient supply of well water are ever becoming greater.

The whole situation may be thus summed up. No tree growth no rainfall, no rainfall no vegetation, no vegetation, desert. It is thus that lands in Europe, Asia and Africa, which were once fertile have been transformed into Saharas. We are preparing the way for the creation of a like situation over a large part of Ontario.

What is the remedy? Systematic tree-planting. Not miscellaneous and indiscriminate planting of good land and bad, but a well-devised system which will insure in time the clothing of every creek bed and spring and every sandy plain and barren ridge with timber.

PLANTING A HILLSIDE TO PINE.

Something towards this end can be accomplished by individual effort. On many thousands of farms there are small sections of broken land or creek bed that should be planted with trees. The labor and time involved in planting is not a serious matter. With the help of two boys I have planted up to 200 pine seedlings an hour. Fifteen hundred in a day, or enough to cover an acre, should be a comparatively easy task for three people. My own planting was done on a sandy hillside. Furrows were run about five feet apart, not up and down the face of the hill, but from side to side so that water running off in the rainfall will not follow and deepen the furrows. One carrying a long-handled shovel removed a spade full of earth from the furrows, another carrying the seedling pines, they were no bigger than tomato plants, in a pail, with water in the bottom, sets a seeding in the space made from the shovel, the loose earth was dropped on the roots and the third of the gang, coming behind firmed the soil down with his boot. Seedling pines from the provincial nurseries are furnished free of cost, save express charges, for the planting of farm lots. Granted anything like a favorable season the danger of failure is trifling. Not over five per cent. of the trees planted in my own case died and the survivors have grown at the rate of a foot a year since planting.

Now as to the advantages in this particular case. There are at a rear corner of the farm a couple of sandy knolls utterly valueless for ordinary farm purpose. If left for a couple of years longer they would have developed into blow sand and have become a menace to an excellent piece of permanent pasture alongside. The trees, now in their third season, have secured a permanent foothold. In five years more (they were planted about five feet apart) they will cover the ground where they stand like a mat and all danger of sand drift in that place will be at an end. That is the first advantage gained.

A sandy knoll planted with evergreens. If left for a couple of years these knolls would have developed blow sand and become a menace to the permanent pasture alongside.

A CONTRIBUTION TO POSTERITY.

A second advantage is that in ten years the trees will give additional protection from sun heat and chilling winds to cattle in the pasture. A third advantage will be the turning of a bare and unsightly hill into a beauty spot. A fourth advantage will be the possibility of securing a valuable crop of rafter timber, from the necessary thinning out in fifteen years. Some day, if all goes well, there will be a valuable crop of matured timber for somebody else to reap. I owe a good deal to those who have gone before. This is a small contribution to posterity.

I believe a good deal can be accomplished towards restoring a proper balance between cleared land and forest all over Ontario, and to the making valuable land that is now worse than valueless, by individual effort and in co-operation with the Government. The Government has made a wise start in creating a provincial nursery from which trees can be obtained free of cost for the planting of wood lots. Where the Government has fallen down is in not making more vigorous efforts in the way of distributing the trees available for planting. Only a few people, comparatively speaking, know of the opportunities open to them. There should in the coming fall and spring through Farmers' Institutes, Women's Institutes and farmers' clubs, be regular campaigns of instruction and information looking to the dissemination of knowledge as to the opportunities open to individuals in this matter. At least one man, and possibly half a dozen men should be appointed whose whole work would consist in the interesting of farmers in the creation of wood lots and in directing the work of planting. If this were done I believe on thousands of farms there would be in a few years small plants of pine and other trees that would add enormously to the beauty of the landscape, serve a useful purpose as a windbreak and in the course of a short time, as is measured in the life of a people, add immensely to the resources of the province.

Seedling pines from the provincial nurseries are furnished free. Not over five per cent. of the trees planted in this case died, and the survivors have grown at the rate of a foot a year since planting. Scene overlooking Mr. Smith's farm.

But what is contemplated and desired called for more than individual effort for its full accomplishment. More than farm wood lots are required. There are areas running from hundreds to thousands of acres in extent that should be wholly given over to forest growth. This is a work that can be carried out only by the province itself, or by the province working in co-operation with county or township municipalities. A branch of the Crown Lands Department of the Agricultural Department should be created for the purpose of carrying on the work on a scale commensurate with its importance. The annual cost would not be large, the ultimate benefit is beyond calculation. What will, if proper measures are not taken, become a desert of sand will be avoided. Destructive wind storms will be held in check. Conservation of streams on which the full development of Ontario white coal enterprise depends will be assured. A most beneficial effect on climate conditions will be assured. To the people of the future of Ontario will be guaranteed an abundant supply of useful timber at moderate cost. The province or municipality, or both, will be secured a large and unfailing source of revenue from the timber grown.

This last is no fanciful picture. In Germany the state derives large revenues from state forests. Some municipalities in Germany have, I understand, been made tax free by means of revenue derived from a like source. There is no reason why a very large part of the income of the Ontario Government and of Ontario municipalities should not be derived from this source in the years that are to come.

GOOD WORK IN THE WEST.

Our neighbors to the south have been more far-sighted in this matter than we have been. By private enterprise and public effort a great deal has been accomplished along this line. Kansas is being transformed from a treeless prairie into a well-wooded country. In South Dakota a yellow pine area of 7,867 acres has been created by direct seeding. All told over 6,000 acres has been covered

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The Man From Glengarry: By W. A. Craick

Energy is One of His Most Striking Characteristics. It Crops Out All Over Him Like a Disease

WHEN the late Sir James Whitney rode into power that stormy January day, now nearly ten years ago, he had in his triumphant following of members and workers, a farmer from down Glengarry way by the name of Lockie Wilson. Wilson was a man of about forty-eight years of age at the time. He had been prominently identified with the Patron movement during the preceding decade and had also acquired considerable fame as a breeder of prize live stock. In agricultural circles and wherever farmers congregated to discuss questions pertaining to their calling, he had been a familiar and an influential figure.

Lockie Wilson's share in the conservative victory was not that of an actual candidate but of a very lively and effective platform worker who had done yeoman service in several constituencies. He had been the man chosen to beard Sir George Ross in West Middlesex on nomination day and had campaigned with Mr. Whitney himself. To say that he had gone into the fight simply for what he could make out of it in the way of political advantage would be unjust. No man ever loved an election contest for the sheer delight of the struggle itself more than this enthusiast from Glengarry.

The campaign served one purpose, which was to show the late premier of Ontario that Lockie Wilson wielded a good deal of influence over the minds of the farmers of the province. Sir James concluded that he would make a valuable addition to the staff of the Department of Agriculture when the time came to infuse some new blood into that Department. That time was not far distant. In 1906 vacancies were created that called for the appointment of a new official and the position of superintendent of agricultural societies and horticultural societies was offered to Mr. Wilson, Perceiving in the combined office a broad field of usefulness, full of opportunities for advancing the interests of his brother agriculturists, he agreed to accept, and having sold his property in Glengarry and disposed of his herds, removed to Toronto. In this way the Man from Glengarry became the government official and at once began the work which has made him the popular person he is to-day among the farmers of Ontario.

A NATIVE OF NO MEAN TOWN.

The hero of this little biography first saw the light of day in Alexandria, County of Glengarry, November 12, 1856. His father was a merchant in the town, likewise a bit of a farmer on the side, for he owned land in the country. The inclination towards rural life, thus expressed in the case of the father, cropped out in the son and, while one of his two brothers took up law and the other engineering, Lockie set his heart early on being a farmer. His ambition was to raise and own the best cattle in the district and he was just a mere lad when he began to win his first prizes at the fall fairs.

Mr. J. Lockie Wilson.

"Many an evening have I walked from my newspaper office, down the maple-lined roadway, past the little blue lake that lies snugly behind Glengarry's county town, to the inviting house of Woodbine farm, where the open hearth fire, and easy chairs added to their creature comforts, the charmed view of the surrounding farms through the wide front windows. Here, indeed, hospitality outdid itself. Conversation drifted easily from topic to topic while the versatility of our host kept us ever alert and enthused. A glass of fresh cider or a delicious McIntosh Red, appearing at the strategic moment, added zest to the evening and perioded in pleasantry a day of toil. Such visions of rural content can never fade. They flash along the retinue of memory, where no city conventions will ever quite efface. It is to those days, indeed, that one must look for the power-head of that enthusiasm which makes Ontario's superintendent of horticultural work field crops, so interesting. He was intensely human. And men respond to that appeal every time."—EDITOR.

At the time of the Fenian Raid, Lockie Wilson was a small boy, but he has a keen recollection of the morning when a messenger rode into town with the alarming intelligence that the enemy had attacked Lancaster. He still remembers seeing the men from the surrounding couutry pouring in, armed with flintlocks, rusty muskets, old-fashioned swords and not a few pitchforks. It was a great event for him and the memory of all the excitement is still fresh in his mind.

His early attraction towards politics was directly attributable to the custom of the young men of Alexandria of holding mock parliaments during the winter months. In this they were supported by all the best men in the town. The parliament which was known as the Parliament of the Dominion of Canada Limited, was run strictly according to the procedure set forth in Bourinot and in consequence the experience and training were most helpful to those who actually intended to enter public life. Several men who have subsequently made their mark at Ottawa owed much of their success to what they learned in the little mock parliament at Alexandria.

In this forum Lockie Wilson was naturally a prominent figure. He was of an exuberant character, brimful of ideas, pugnaciously inclined and eager at all times for a scrap. For a time he filled the portfolio of agriculture but he could not long maintain friendly relations with his colleagues and, resigning, formed a third party that harassed both the government and the regular opposition until he himself came into power as premier and president of the council.

Then came the Patron days and the young stock breeder, now advancing in his thirties, was drawn into the movement. Apparently it was almost by accident that he became associated with the organization. President C. A. Mallory was billed to address a meeting in Alexandria and some farmers from the district where Mr. Wilson lived, passing along, urged him to go into town and attend. He was not specially interested, —indeed, knew very little about the agitation, but decided at the last minute that he would go and hear what Mr. Mallory had to say. The result was that he became enthused and from that day until the Patron movement died out, he was one of its staunchest supporters.

BECOMES A PATRON.

The Patrons were strong in Glengarry and forty lodges were formed in the county. Lockie Wilson was chosen unanimously to be president of his local lodge and delegate to the county convention as well. The county convention in turn picked him to represent them at the national convention in Toronto in 1893. He journeyed up to the Queen City, just a young farmer from Glengarry without a friend in the place, but so well did he conduct himself and so effectually did he speak when the opportunity came, that he found himself before the convention was over elected to be one of the grand trustees of the Patron order.

Back in Glengarry the political pot began to boil and the enthusiastic patrons set their hearts upon electing members to both the House of Commons and the On-

tario Legislature. A mammoth convention was called to select candidates. Wilson, entering the convention hall just as nominations for a federal candidate were called for, received an ovation and was promptly named. He agreed to accept, provided there was not a single dissentient voice. The chairman put the question and they say that for a minute a pin might have been heard to fall. There was no doubt about the sentiment of the gathering and the nomination was his by acclamation. Subsequently Mr. D. M. Macpherson was nominated for the Legislature.

The provincial election took place first in 1894 and the Patrons succeeded in electing their man, he being one of the eighteen members returned by the organization at that time. The Dominion election on the other hand was held back for another two years. Mr. Wilson had as his opponent, Colonel R. R. McLennan, the sitting member, who had captured the riding for the conservatives in the previous election. The contest was a hot one and might have resulted in the return of the Patron candidate had it not been for his attitude on the Manitoba school question which alarmed the Roman Catholic voters. As it was Colonel McLennan won by a majority of 734.

During the years that the Patron movement was in full swing Lockie Wilson occupied a prominent place in its counsels and in 1895 was elected president of the order, retaining office until the organization was broken up. He was a leading exponent on the platform and in the press of its opinions and from one end of the country to the other he shared with Messrs. Mallory, Haycock and two or three others the fame that accrued. From leadership in the Patron he simply dropped back into his old party allegiance as a Conservative.

One of the amusing stories about Lockie Wilson which has been preserved from the Patron days relates to the bye-election campaign in North Ontario in 1895, when R. C. Brandon ran for the Patrons against Colonel McGillivray. Wilson took a prominent and energetic part in the campaign, stumping vigorously through the county. One piece of ammunition which he used with a good deal of effect was an accusation against the government that they were permitting the importation of canned mutton from Australia in competition with the home product. This statement was denied by the Government candidate most imperatively.

The resourceful Patron thereupon arranged through a third party to obtain some samples of the Australian mutton, which was actually shipped into the riding by the Montreal firm that had imported it. Next time Mr. Wilson went on the platform he had everything staged for a sensation. Colonel McGillivray himself was present and the excitement ran high. When the patron orator attempted to talk mutton again there came a voice from the rear of the hall insinuating that he was a liar. This gave him his chance. "I'll show you whether or not I'm a liar," he exclaimed and produced a can of the mutton, waving it in the air and offering to let anyone inspect it. Of course the evidence was too strong to be controverted.

As a sort of sequel to this story, it is related that the Patron candidate, Mr. Brandon, planned to create a similar sensation at a meeting in the northern part of the riding. He tied up a can of the mutton and slipped it into his bag. But unfortunately the tories got wind of it and at Blackwater Junction managed to substitute a brick for the can. The denouement may be guessed.

A J.P. BY OLIVER MOWAT.

All the time that he had been working in the Patron interest, Lockie Wilson had not been neglecting his prize cattle back on the Glengarry farm. They were a sort of passion with him and to make them even more perfect was his great desire. He became a big exhibitor at Toronto, Ottawa and other exhibitions.

The enthusiasm of Mr. Wilson breathes into life in this exhibit of Field Crops. This display has never been heaten. Every county in the province caught the spell.

He gained many prizes and awards of merit and achieved a national reputation as producer of thoroughbred livestock. Incidentally he built himself a house that for style, comfort and convenience could scarcely be excelled by any other farmer's residence in Eastern Ontario. He had been made a J.P. by Oliver Mowat when he was only twenty-one and he was called on to act as a magistrate quite frequently.

Following some contracting work which he had done for the Canada Atlantic Railway as a young man, he had gone West and invested in prairie lands. It was to inspect his property out there that he went to Manitoba in 1905. The first provincial elections in Saskatchewan were going on at the time and he was induced to lend a hand to Mr. Haultain, who was the conservative leader in the contest. For two months and a half he stumped the province and there must be many farmers in that part of the Dominion who can remember his eloquence, in that campaign.

Then came his appointment to the Department of Agriculture of Ontario. In his tripartite position as superintendent of agricultural societies, horticultural societies and the vegetable growers' association, he has his hands full, but notwithstanding he has been able to do some very effective work. He has been particularly strong on competitions and has built up at least three contests, in which thousands of Ontario farmers are now competing annually. These are the field crop competitions, the vegetable crop competition and the plowmen's match. All three are in a sense his offspring and to their promotion he has given his best endeavor.

The standing field crop competition was started about eight years ago. It was to remedy a condition into which the fields of the province were getting. Farmers were going in strong for dairying and were neglecting their field crops. Some two hundred competitors took part the first year. The next year there were more, until this year 4,500 entered, with prizes aggregating $25,500. The exhibits this fall were the finest ever put up, demonstrating that Ontario can sweep the world in the quality of its grains.

These competitions, with the fall fairs, The spring stallion and bull shows and the seed fairs, have created a great demand for competent judges and to provide capable men, Mr. Wilson has arranged short courses for judges at Guelph and Ottawa, with the result that there are now in the province between 550 and 600 qualified men to take charge of the work at the fairs, etc.

Effective work has also been done by Mr. Wilson in arranging wet weather insurance which safeguards the management of the fall fairs from bad weather; and in clearing out the fakirs from the exhibitions.

Apart from his departmental work, which is obviously extensive, Mr. Wilson is at present Grand Foreman of the Ancient order of United Workmen; vice-president of the Burns Literary Society; a director of the Toronto playgrounds Association and president of the Sons of Scotland Athletic Asociation. He also holds office as vice-president of the American Civic Association and attends all its conventions. To cover all these activities one must needs be possesed of considerable energy and enthusiasm and with both, Lockie Wilson is well supplied.

AN ENTHUSIASTIC CELT.

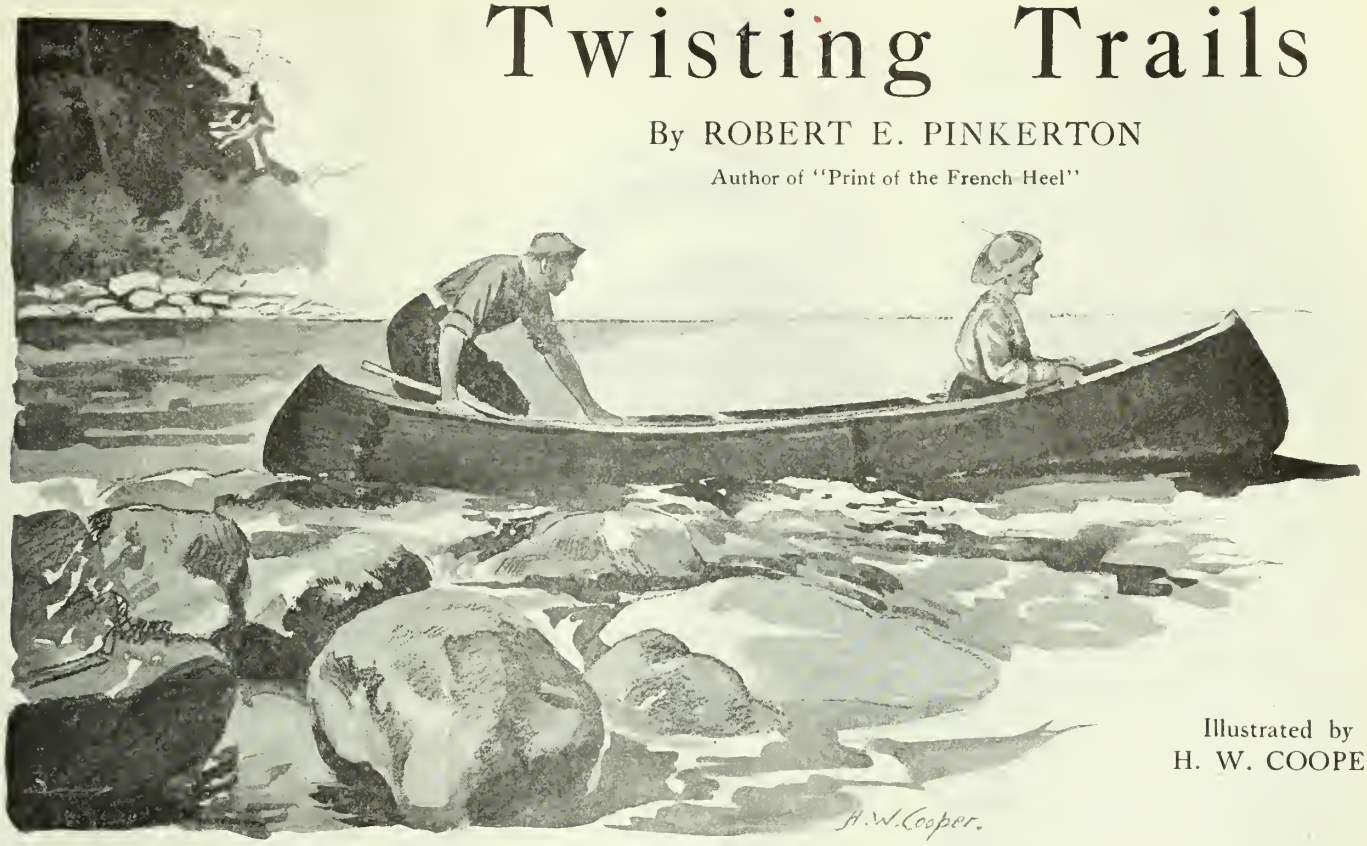
There is no doubt that energy is one of his most striking characteristics. It crops all over him like a disease. In speech, in look, in action, it is apparent. He talks energetically, carried along by his Celtic enthusiasm; his expression is energetic, the play of emotion constantly on his face; and his movements are full of energy, suppressed at times but always ready to break out.

Continued on Page 52.

Twisting Trails

By ROBERT E. PINKERTON

Author of "Print of the French Heel"



Illustrated by
H. W. COOPER

From a clump of spruce the man drew a canoe and launched it. She sat down and the woodsman pushed out into mid-stream.

Readers of Farmer's will enjoy this stirring tale of Northern Canadian adventure. It is a wholesome one, free from any questionable spheres of influence. Through it all runs a thread of romance, and the mystery of it adds pique to the delightful half hour you will spend in this tale of the woods. As announced in the October issue, the writer is enjoying a sort of hermit's retreat near Atikokan, where he and his wife are nature's guests. A generous installment will appear in the December issue.

CHAPTER I.

MRS. LAWRENCE HEATLEY blamed her own plainness of feature for her husband's interest in pretty girls. And, because she was remarkably generous, broad-minded, and liked pretty girls herself, she generally managed to have some about her. Heatley was amused, she was unperturbed, and the girls always had a good time with the Heatleys.

It was not exactly of Mrs. Heatley's choosing, however, that Helen Sumner accompanied them on a trip to the Whisky Jack mine. Mrs. Heatley liked pretty girls; but she also demanded loyalty, cheerfulness, and a sense of humor, three of her own chief characteristics. Helen Sumner possessed none of these, but her father owned the Whisky Jack, and it was at Mr. Sumner's suggestion that the girl accompanied them.

"You're doing me a great favor in running out to look over that property, Heatley,' the mine owner had said. "It's a bigger favor than you know, for your word when you come back means success or failure to me. One week from to-day I'll be bankrupt unless you find things out there as I have confidently believed they are.

"And Helen. The poor girl is on my mind, too. She's been hard hit by this young Forbes—you know him—and is still moping around because I can't see him as a possible son-in-law."

"What's the matter with Forbes?" Heatley had asked. "Thought he was a decent sort of young fellow."

"I dare say he is, but Helen's all I've got, you know, and I want only the best for her."

"Rot!" was the mining expert's comment. "You're only jealous. But we'll take her along. Fresh air and exercise and something entirely new can kill a lot of sorrow, especially if it's young sorrow. Good-by, old man. I'll get a wire to you as soon as I can look over the ground and see what's there. Hope it's the right word."

The first two hundred miles west of Toronto Heatley tried to cheer up the girl who was to accompany them into the wilderness. He had seen so much of wilderness travel that he dreaded it without cheerful companions. But at the end of two hundred miles he gave it up and turned the task over to Mrs. Heatley. She tried valiantly until they reached Port Arthur, but with no better success.

As they went on westward, twisting about lake shores, rocking through muskeg, rumbling over rapid-filled streams, Heatley and his wife left Helen alone.

"Cheerful prospect," commented the engineer. "The bush is bad enough when everybody's happy."

"It is too bad," was the response "Now, if she were only like that girl in the first section forward. Did you notice her, Lawrie? If you didn't you are getting old. There is a girl who is prettier than Helen, and I'm willing to risk most anything on her being bright, cheerful and competent. She's got that business air that the modern girls, some of them, are acquiring. I couldn't imagine her moping because her father didn't like her best man. She's the sort who would marry him anyhow."

"Hadn't noticed her," said Heatley, and they both laughed.

"But I'd like to trade Helen for her," she went on. "Where's this jumping off place where we take to the pines?"

"Not more than two hours now; Vermilion, they call it. Probably a water tank, telegraph office and section house, though I think Sumner did say there was a hotel. Probably a little store, too, though I got all the provisions in Port Arthur."

It was seldom that anyone alighted from the westbound passenger at Vermilion, and not one of the nineteen inhabitants remembered ever having seen a party similar to that for which the porter set down his little step. But their surprise was not equal to that of the Heatleys, for the girl in the forward section had preceded them to the platform, and, when they had gathered their own luggage, was half way across the open space between the tiny station and the little log hotel.

"I always was lucky," Heatley laughed; "but I'll bet she's a woman traveler."

"Without sample cases," retorted his

wife. "Lawrie, your blindness is suspicious."

When Heatley registered, the girl was just leaving the pine table which Ben Hogan used as a desk.

"Rea Straine, Toronto," he read as he wrote the names of his own party.

Business was too urgent to permit conjecture. He needed three guides and three canoes, and all arrangements must be completed for a start in the morning. The mine was more than twenty-five miles from the railroad, and two days would be required for the journey by so large a party.

Heatley drew the hotel man aside and asked about guides and canoemen.

"Men you want at the store, probably," was the reply. "Everyone's waiting for the mail there now."

The meagre mail had been distributed when Heatley entered the post office and general store. There were half a dozen men lounging against the single counter, all evidently bushmen.

"How many of you men have canoes?" asked the engineer, brusquely.

But the bushmen were not accustomed to doing business with strangers without proper deliberation, and there was no reply.

"Anyone in this place got a canoe and a man to paddle it?" Heatley demanded of the storekeeper.

"I guess some of these lads have," was the answer. "Sam and Jack here have canoes, and there's an Indian camped at the river who has two good birches."

"Three's all I want, and three good men to paddle them. Want one who can cook, two to make camp. I have a party of three, two women and myself, and I want to start to-morrow morning. Four dollars a day for each man and his canoe. I have a tent for the men, but they must furnish their own blankets. I have grub and dishes. How about it, fellows?"

"How long's the trip?" asked one of the men.

'Ten days. Go to Sumner's mine first and then loaf around for a week. Don't be afraid of working too hard."

"I guess I can go," deliberated one. "How about you, Jack?"

"Nothing to keep me here, I guess, though I was going up the lakes with Toms in the morning."

"Then it's settled,' exclaimed Heatley. "Sam, go down and hire the Indian and his best canoe. Jack, take these checks and go to the station for our stuff, six packages, and bring them to the hotel. I'll be there if you want to see me."

As Heatley turned toward the door, the girl who had left the train with his party entered.

"I want to employ a guide," she began at once, addressing the man behind the counter; "a guide with a canoe. The hotel man told me you could get one," and she turned to look frankly at the man behind her.

"I'm afraid this gentleman got them all," apologized the storekeeper.

"Bill Toms is in town," offered one of the men. "He might go."

"Toms won't do it," declared another. "He's hot on the trail of the biggest gold mine ever discovered, and a thousand dollars won't keep him away from his prospect."

"I couldn't imagine her moping because her father didn't like her best man. She's the sort who would marry him anyway."

"But surely there is someone who can paddle a canoe, and there must be a canoe in a place like this," exclaimed the girl. "I'll pay well."

"I'm afraid payin' won't help, miss," said the storekeeper. "I know every canoe, and every man in this district, and this gentleman here has them all."

The girl turned and looked at Heatley for the first time. Instantly the engineer was all contrition.

"I'm sorry," he said. "I had no idea, when I engaged these men, that I was cornering the labor market of Vermilion."

"I'm sure I can't hold it against you," Miss Straine replied.

"I would gladly give up one of my men, or all of them, were it possible. But I am on a hurry-up mission, and I must get away in the morning. Perhaps someone will show up this evening or to-morrow."

"Perhaps," answered the girl thoughtfully.

"Won't you come over to the hotel and meet Mrs. Heatley? We can talk it over, and there may be a way out of this."

"That is kind of you. I will."

The girl was surprised by the cordiality of Mrs. Heatley's greeting and by her ready solution of the problem.

"Come with us, of course," the engineer's wife exclaimed. "We will have room, surely, in three canoes."

"You are very good, but perhaps we are not going in the same direction," smiled Miss Straine.

"After about three days, we can go in any direction, can't we, Lawrie? We have to go and look at this mine, and then there is a week for nothing but loafing about in the wilderness."

"What mine is that?"

Miss Straine asked the question with casual interest.

"The Whisky Jack. Mr. Sumner, of Toronto, owns it, and Mr. Heatley is going to look it over and see if it is really a mine or only a hole."

"It would be interesting. I never saw a mine, a gold mine, but I can't impose my troubles upon you."

"My dear child, I never have any troubles, and I like to share other people's occasionally. Can't you tell me?"

"Oh, it isn't that bad," laughed Miss Straine. "You see, I have a brother who has tuberculosis. The doctor said that he had to get out into the bush somewhere, and suggested this district, I came up to look for a site for a cabin. When it's built, we are coming up here to live until he is well."

"That's quite an undertaking for a man," exclaimed Heatley; "and you don't seem to be afraid."

"I'm accustomed to taking care of myself, and it has been my experience that it is an easier task in the woods than in the city. I've done some canoeing and fishing and shooting, you see, though never in so vast a wilderness as this."

"Well, you come with us to the Whisky Jack and, after we've looked over, we'll look up a site for your cabin," decided Mrs. Heatley, enthusiastically. "That will be fun, Lawrie, and it will give our wanderings an object."

"I can't tell you how kind you are," said Miss Straine, "and I want to go with you. But there is this difficulty. You are going to start in the morning and I must wait until noon at least for a telegram."

"Wait a moment and I think I can fix that," called Heatley, as he hurried from the little hotel office.

In ten minutes he was back.

"It's settled," he cried. "We start in the morning and make the portage at the north end of Two Island Lake. We will camp at the other end of the portage where, the guides said, there is a good camping place. You wait for your telegram and, when it comes, a prospector named Toms, who is in town with his canoe after supplies, will take you as far as the portage. He is going near there and it will be only a mile out of his way. He'll drop you there and you have only to walk across and be in camp."

"You're a wonder, Lawrie," exclaimed Mrs. Heatley. "Now it's settled. Have you seen Helen?"

"Saw her going up to the station when I came from the store with Miss Straine. I do hope she cheers up."

The door opened and Miss Sumner came in. The doleful expression was gone and there was supplanted excitement in her eyes. Both Heatley and his wife were so astonished they forgot the necessary introduction.

"What's come over you, child?" asked Mrs. Heatley.

"Come over me? Nothing. I just got a breath of the pines and a glimpse of

the river down there, and I'm impatient to be off."

As the girls were being introduced, Ben Hogan announced supper by merely opening the dining-room door and the four went in. Helen Sumner immediately assumed charge of the conversation, and the pleasure of Mr. and Mrs. Heatley in acquiring a new member of their party was nearly equalled by their wonder at the sudden change in the spirits of the mine owner's daughter.

The next morning Miss Straine waved good-by to the three canoes as they turned the first bend in the river and then went back to the hotel. At noon the operator in the station brought her a message, and at one o'clock she was in a canoe with the prospector, paddling northward.

Toms, whose life had been spent searching Canada for gold, knew little of women and nothing of the type represented by Rea Straine. His first surprise came when she took a paddle and swung it effectively from her place in the bow. His surprise increased when he suddenly realized that they were talking as though they were two men, not a man and a woman, and that the girl knew vastly more about canoes and the ways of the wilderness than he thought it possible for anyone except a man to know.

It was with genuine regret that he deposited her on the sand beach at the north end of Two Island Lake.

"This is where they landed," he said pointing with his paddle to the many footprints in the sand. "There's the portage trail, and it's only half a mile and no place to get off it. I must be mooching, as it's getting late. B'jou," and he gripped her extended hand heartily.

It was only five o'clock and the sun was still high as the girl turned into the brush along the dim portage trail. She was alone in the forest, but there was no fear for what the forest might hold. She remembered city streets where she had shivered slightly at night, but she could not imagine cause for shivers here. A white throat sang from a jack pine, a whisky jack fluttered silently to a limb above her head and a brown rabbit hurried awkwardly along the path ahead of her. Instinctively her pace quickened and she began to whistle as she strode along.

The trail dropped into a cedar swamp and she picked her way over the poles laid by early travelers. Then it lifted to a ridge and passed between two walls of rocks. Still whistling, she looked ahead through the draw. At the other end stood a man, a man with a piece of rope in one hand and a soiled handkerchief in the other.

Miss Strain stopped and the man walked toward her. His face was covered with a heavy beard and he wore the rough garments and shoepacs of the woodsman.

"Good night," came the girl's firm greeting as she started on to pass him.

But the man stepped in her way and threw out his arms to stop her.

"You're not going any farther," he said, and she was so near she caught the odor of whisky on his breath. "Don't make any racket now and I won't hurt you none. Start yelling and I'll jam this down your throat!" And he held out the soiled, red handkerchief.

CHAPTER II.

IF the old prospector had been surprised at the competency of Rea Straine, the man who now confronted her was dumbfounded by her conduct. She did not scream, she did not run, she did not faint, nor did she fall to her knees and beg for mercy. She merely looked steadily and scornfully, straight into his eyes. He found his own wavering.

"Don't make a fuss and I won't hurt you," he repeated with some confusion.

"Of course, you won't," she exclaimed. "Get out of my way and let me pass."

"You're coming with me," he replied more steadily and with a determination clearly forced. "Be quiet about it and you won't be hurt."

"Don't be ridiculous. I'm not going with you. Get out of my way immediately."

"Now, see here, Miss Sumner, I don't want to be rough; but I've got to take you and you're going with me."

"What did you call me?"

"Miss Sumner, of course."

"But I'm not Miss Sumner."

The man laughed.

"Don't try that. Maybe you think you can make me believe you're that fellow's wife. But I saw her across the portage and she's nearly old enough to be your mother."

"But I'm not Miss Sumner. You've made a mistake. Let me pass."

"I can't make a mistake. There was only one young woman in the crowd, and that is her. I watched them when they made camp, and I saw you start back across the portage alone."

"This is all nonsense. Miss Sumner is over there in camp now."

"I ain't got time to argue with you. Come along peaceful or I'll use these," and he held out the rope and handkerchief.

"Throw those things away."

"I don't want to be rough and this taking you is none of my affair. If I didn't have to do it, I never would."

"None of your affair. What do you mean?"

"It isn't me that wants you out of sight a few days, may be a week, and then you can go as safe as you come."

"Who does want me?"

"I'm not a tellin' and you won't know."

"But I'm not Miss Sumner. I tell you there is a mistake."

The man stepped forward angrily.

"Come on," he said gruffly. Don't holler or I'll slam this in your mouth," and he again held out the handkerchief.

"Wait a minute. I won't make a noise. When were you at the mine last?"

"Mine!" the man exclaimed. "What mine?"

"The Whisky Jack."

"Never was there."

"Then you don't know Fowler?" And she watched his face closely.

The man stared at her suspiciously before he replied.

"Fowler? Who's Fowler? Never heard of him. We can't wait here any more. Someone'll see us. Come on."

He grasped her arm and started through the thick brush, half dragging the girl.

"Let go and I'll come," she cried angrily.

Continued on Page 55.

"All I wanted to know," snapped Mr. Sumner, "have you enough proof to cause his arrest?"

Looking at Others' Profits

Some Glimpses Across Line Fences at Profits Being Made by Our Neighbors.

CHEAP WINTER FEED FOR SHEEP.

GEORGE H. CLARK, Seed Commissioner, Ottawa, said two years ago that there were upwards of a million and a half bushels of dockage screenings which accumulated each year in the large elevators at Port Arthur and Fort William.

Some of these screenings seem of doubtful quality, or even unwholesome as stock food. At least 50 per cent. are really excellent and very cheap feed, consisting of shrunken and broken wheat, oats, barley, wild oats, which are entirely wholesome as a feed, wild buckwheat and some other of the weed seeds. The great bulk of these screenings, 95 per cent. or more, has been during the past four or five years exported to the United States. They are fed under certain regulations and restrictions. Most of them are sold at prices ranging from six to twelve dollars per ton. And, the mutton that is produced from these screenings, and on which duty is paid, is being brought back into Canada, we are paying duty on it. There is a great fund of good feed which our stockmen and farmers know practically nothing about.

Professor Harcourt followed this up by telling of two men who requested his department to analyze samples of the weed seeds, as they thought of taking up the whole of the product at Fort William, pressing it into cakes and exporting it to Europe for feed. The samples averaged 13 per cent. of oil and 14 to 15 per cent. of protein.

There was a suggestion that the Committee on Weed Seeds in Screenings be discharged, but Mr. Clark was of opinion that if there was any time when that committee would be needed to do useful work it would be during the next eight years, and eventually it was duly moved and seconded and carried that the services of the committee be still continued in connection with this work to watch for further developments.

Now if there is one place more than another where sheep both thrive well and sell well, it is the Muskoka district, but our chief problem is how to obtain sufficient winter feed to carry them through. The large and increasing tourist trade demands a great number of lambs in the summer. We do not need to export them. The Hon. Jas. S. Duff, the Minister of Agriculture for Ontario, when recently in the district, urged us to give special attention to sheep raising.

Is there not here an excellent opportunity of procuring some cheap feed if we were only organized co-operatively so that we could deal direct with those who have the disposal of this quantity of feed. Why should it be shipped into the United States, and sold at that cheap rate to our neighbors to the south to help them to raise mutton to compete with our own lamb and mutton.—P. B. Walmsley, Muskoka.

CLOVER AND TIMOTHY SEED.

DOES the growing of clover for seed pay? It depends largely on the location of the farm and on the character of the soil. On the ordinary clay loam farms of Eastern Canada, there are many farmers who are making good returns from red clover, alsike and alfalfa.

In growing red clover seed, the farmer has the advantage of a crop of hay which to the feeder is of undoubted value. I have taken two tons per acre off a field, and then had a splendid yield of red clover seed in the fall. In 1913 I had a field of twelve acres from which I threshed 47 bushels of clean seed. For this the returns were $399. This gives a return of $33 per acre, besides having had a good crop of hay and the straw from the seed crop for sheep feed.

In growing timothy for seed the case is quite different. It is only in exceptional years that a good price has been secured. And this high price easily diverted a great deal of the crop into the seed channels. The straw from the seed crop is of only little use for feed, while the taking of substance from the soil is of great importance. A ton of timothy hay will take out about 28 pounds of nitrogen, 6 or 7 pounds of phosphorus and from 28 to 30 pounds of potash. It can readily be calculated, therefore, what it means to take off a second and third crop of hay from a field. Nevertheless the following returns from seed were good looking.

In 1911 I had 22 acres from which I got 83 bushels of seed that sold from $7 to $3 per bushel, totaling a return of $591 or nearly $27 per acre.

The next year, from 15 acres I took 80 bushels, but prices were $2.25 to $1 which brought returns to $12 per acre.

In 1913, ten acres made me 63 bushels for which $2.75 and $1 were received.

In the case of alsike, there is a big risk. You get either a good crop or a very poor one. It leaves the land dirty and there is little return in straw. Yields are though very encouraging some years. As high as 10 bushels to the acre are sometimes made, while half that yield is quite common. At $6 to $8 per bushel, the returns run about $30 per acre.

Some big yields with big prices make good stories in good years.

Alfalfa is produced for seed successfully in southern Ontario and in Alberta. A yield of 4 to 6 bushels to the acre at a price of $10 and $12 gives a very favorable return. Besides this one gets another crop of splendid hay. A neighbor of mine experimented in alfalfa one year and left the first crop for seed from which he got three bushels to the acre.

In my opinion the mixed farmer who can arrange it, should raise a little seed every year, provided his farm is free from noxious weeds that adulterate clovers, or made free by pulling during the growing season.—F. H. Westney, Ontario.

SCHOOL FAIRS.

THE success that has attended school fairs all over Canada has been of such a beneficial character that I sum up here the things that have appealed to me in Grey county.

Children in the country schools get a very practical knowledge of organizations and the carrying out of organized plans which will be very beneficial to them in their future work, not only in private life but in public life also.

It gives the responsibility which teaches each to depend upon his own effort.

It will take from each that timidity which so often keeps young men and women from speaking in public, by giving them knowledge and experience which assures them of their own capabilities.

It gives practical work on the farm which will be of value physically and also give practical knowledge that will be used by the majority of the pupils when they have to leave school.

Many children get a correct idea of how much labor must be given to each piece of grain and are more willing to help their parents with such work as they are able to perform.

The child's observation powers are developed. The plot is of intense interest to him as he

Farm residence of the Hon. Mr. Motherwell, at Abernethy, Sask. Trees were all planted by Mr. Motherwell after taking up the homestead.

visits it from day to day he not only marks the difference in growth but also the need of any work being done to keep the plot in proper condition.

It awakens the minds of the children to the fact that continual labor is necessary for future results, thus furthering the habit of industry.

It gives a splendid opportunity for many problems in arithmetic, and the children are alive to work which deals so closely with their own experiences.

The judging classes at the O.A.C. promise to be bigger than ever. **A sale of surplus purebred stock** took place last month.

It also gives a training in practical letter-writing and business forms. The children have these to write in the work of the fair and the teacher should seize the opportunity to have this taught in school while the pupils are conscious of the need of it.

It is a great aid to the parents in getting their boys and girls interested in the work of the home. It was very encouraging to hear such remarks as: "Why, this fair is worth one thousand dollars if it were only to get the girls started at sewing and baking"; and the reply, "Well, if it is worth that to the girls we cannot estimate its value to the boys"; and another, "That baking is better than the women take to our fall fairs"; also, "I would rather stay at home from our fall fair than miss this one."

It presents a splendid opportunity for the parents to meet others, not only these from the home section, but from the whole township. All are interested in school work and many see, as never before, the value of our present curriculum. They are more in sympathy with nature study, agricultural and manual training when they see such a wonderful vitality as the result of such work.—Elizabeth Binnie, Grey Co.

IRRIGATION FARMING.

THE time has long passed, when it was quite in order to question the advisability of using water for the purpose of irrigation for the production of crops, other than flowers or some special garden products, or whether it was of real use as an aid to agriculture.

While there were some individual schemes in operation, in many parts of the West, specially in California, it was not till the U.S. Government took up the subject, that this very important matter was looked on with very great interest, from a commercial standpoint. But time has changed somewhat, and to-day the U.S. have something like $200,000,000 tied up in irrigation projects, and seem very well satisfied with this investment. In fact, the time will come when not a single mountain stream that traverses a fertile valley on its way to the ocean, will not be diverted, and put to use, as an aid to the better production of crops.

But this is as it should be. We must use intelligently, all the means at our command, in order to compete with advanced sections that have availed themselves of these advantages.

In Canada, we have few large irrigation systems, the Bow River, Alberta, at the present time being tapped and diverted more than any other, and the C.P.R. with its expenditure of $12,000,000, and the Southern Alberta Land and Irrigation with its $4,000,000 ditch, furnishing the two great examples on our Western prairies.

We have as good soil as can be found anywhere. We have a good climate. Our products are sufficiently diversified, and important to engage the best methods of producing. Our markets are increasing rapidly, and will take all we can produce. Our means of transportation are yearly getting better, and with the completion of the two new transcontinental railroads, and Panama Canal, put us in shape to compete with any other part of North America.

Such being the case, it is up to us as a farming fraternity to keep up to the very highest standard of methods, and this we cannot do unless we are broad-minded enough to avail ourselves of all facilities at our command.

As to raising crops with the aid of irrigation, we have some good examples in our brothers in British Columbia who have during the past few years shown some very fine examples. If one visits the small valleys which make up the greater part of the farming and fruit-growing sections of British Columbia one will find they have taken advantage of almost every small mountain stream, and by a system of ditches brought it to the lands to be served. In many cases such a task has cost many times more than the lands to be served by it. But the game was worth more than the candle, for it gave them valuable insurance against crop failure, and made it possible to grow many varieties of crops that otherwise could not be grown with any degree of certainty.

It is true, that the most up to date application of water is best done by levelling our lands, but this will be found out after one has put it on once or twice, and can be done at easy stages. It is not necessary to do it all at once.

But irrigation farming is not well adapted to lazy men. In fact this class do not like it, and will tell you a dozen reasons why it is a failure. Irrigation farming must be handled by *real* farmers. I mean farmers who have faith in their farms, and who are willing to read and keep up with times. Those who are not, and who live in irrigated sections of the country, had better sell out and go farther back and get a homestead.

It is not fair to pit an irrigated farm against one not so treated. Conditions other than the putting on of water may be entirely different, and might have all to do with the crop. The only fair test is to take as may be done, two farms, each of the same grade of land, each having the same seed, work and treatment, and lying side by side. The one having been irrigated, and the other not. A comparison of the crops of such places will give a fair example of whether irrigation is beneficial or not. It is not at all difficult to find plenty of such places, and it is interesting to see a 95 per cent. crop on the one which had been watered, with a 25 per cent. crop on the other. Such examples will go far to convince anyone who can be convinced that it pays to irrigate.

—F. W. Crandall, Gleichen.

GROWING HAY CROPS.

EVERY farmer should follow some definite plan of rotation and the clover crop is the most essential part in every rotation whether it be a short or long rotation. This crop besides furnishing a larger amount of food per acre contains a high percentage of protein or nitrogenous substance that is lacking in the rest of our bulky fodders. By the decomposition of the clover roots in which the nitrogen of the air has been stored, nitrates are formed that are so essential to the growth of our corn, root, and grain crops. I will give you the results of a few experiments that were conducted on our farm last year under the direction of the Commission of Conservation, which go to show that we have a lot to learn about the growing of clover and timothy hay. Waterloo county is noted as a good wheat-growing county and the majority of farmers seed down their wheat fields, sowing the timothy in the fall, and the clover in the spring either when the ground is frozen, or later when the land is dry and then harrow it in. The amount of seed usually sown is two or three pounds timothy and eight or ten pounds clover per acre. In very favorable seasons this amount is quite sufficient, but often the crop of hay especially the timothy is very thin. Farmers do not seed thicker because the seed is expensive, but mainly because they believed that heavier seeding would retard the grain crops.

To find out what quantity of grass and clover seed per acre would give the best results, and if sowing clover in the fall would prove a success we divided a twelve-acre field into six plots of two acres each, sowing a different quantity of grass and clover seed in each plot, but the same amount of wheat per acre on the whole field. The different seedings were:

1st plot, 2 acres, 4 lbs. timothy, 6 lbs. clover.

2nd plot, 2 acres, 6 lbs. timothy, 8 lbs. colver.

3rd plot, 2 acres, 8 lbs. timothy, 10 lbs. clover.

4th plot, 2 acres, 6 lbs. timothy, 6 lbs. alsike.

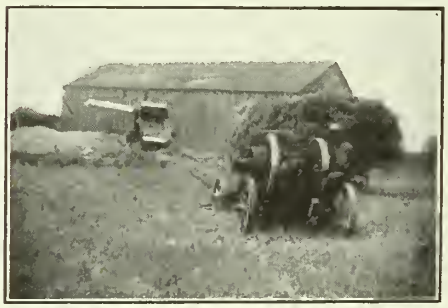
5th plot, 2 acres, 8 lbs. timothy, 8 lbs. alsike.

6th plot, 2 acres, 2 lbs. timothy.

This seed was sown with the drill while sowing the wheat. During the winter the field received a top-dressing of three loads of barnyard manure to the acre. Where the seeding was light the catch was not very strong, but where it was sown 8 pounds timothy and 10 pounds clover, the stand was good showing that we have been seeding too light. We noticed that there were practically no weeds where the seeding was heavy, while on the more thinly seeded plots, especially the one sown with 2 pounds timothy, the weeds were more plentiful. As to the heavy seeding injuring the growth of the wheat we did not find it so, as the part of the field that had the heavy seeding, had the best and cleanest wheat and won the first prize in the standing grain contest in Waterloo county. Farmers quite often spoil a lot of hay by cutting too much at a time, and not being able to handle it at the right time.

Our method of haying has been to cut three or four acres in the morning and haul it in the afternoon or evening of the next day. Cutting a little like this every day, and tedding it or turning it with the side-delivery rake, keeps the men employed all the time, as no time is wasted in waiting for the hay to dry, as is often the case when a large area is cut at one time. We use a hay loader, the same one that has been in use on this farm every year for twenty-eight years. We have eight wagons with racks, and we load them up in the evening when it is cooler working. Starting at six o'clock three men, with a boy to drive the team while loading, can load and deliver at the barn eight loads in less than two hours. If there happens to be a lawn social or a football match within six or eight miles, we can load up six loads after six o'clock and still be there in lots of time by making use of our automobile.

As our barn is one hundred and eighty feet long, with a gangway at each end we do not have to unload the wagons until morning. In this way we are able to take advantage of the evenings when it is cooler to load the hay, and in the morning while the dew is drying, and the barn is coolest we unload the wagons.



W. B. Roberts, of Glen Avon, with his gasoline outfit in the buckwheat harvest.

Many farmers say that you cannot make as good hay by using the hayloader, as you can by coiling it. That may be the case with the old way of cutting down a whole field at once as it is often spoiled before it is taken in, but we claim that, with the exception of alfalfa, which is very hard to cure, we can make better hay with the loader, than we can by coiling, if a small area is cut at a time.

ALFALFA FAILURES.

Alfalfa, unlike the red clover, is not suitable to all parts of the country. Many who have tried it once or twice and not been successful in getting a good crop have become discouraged and given it up.

The reasons for their failure in many cases are the buying of seed produced in a warmer climate, to sowing the seed on the wrong kind of soil, to pasturing the crop, or to sowing it too thin. We always have our best crops of alfalfa on gravelly knolls. It will not thrive on land that is not well drained. In sowing the seed on land that has not produced a crop of alfalfa before, the seed should be inoculated with the nitro-culture, which can be procured at the O.A.C. Home-grown seed should be procured if possible, and sown not less than twenty pounds to the acre on land that has been cleaned of all weeds and wild grass. One bushel of barley to the acre makes a splendid nurse crop, although land that is not clean can be cultivated until late in June and sown with alfalfa alone. We cut the crop when about one-third of the plans are in bloom, and as it is a difficult crop to cure, and is easily spoilt with rain, we put it up in small coils, and allow it to become thoroughly dry before mowing it.

Another branch of hay production which is being neglected, is the growing of clover seed. When a farmer has to pay out fifty or one hundred dollars for seed every year, he does not sow as much as he would if he produced it on his own farm. This year we kept a twelve-acre field of clover for seed. The first crop was a very heavy one and we cut it a little early so as to give the second crop a better chance. We weighed the clover as we hauled it in and found we had six tons, from which we threshed twenty-bushels of good seed. The clover straw is worth considerable for feed, and with the seed at twelve dollars a bushel it paid much better than if we had left it for pasture or cut it for hay.

Our method of harvesting the clover seed is to attach a piece of sheet iron four feet wide and five or six feet long to the back of the cutter bar of a common mower. A man walks behind the mower with a hand rake, and pulls off the clover into rows. This saves all the heads of clover and the horses do not tramp on the crop. The accompanying photo will give some idea of how it is done.—Will C. Barry, Waterloo county.

A STORY OF BISMARCK'S.

"My grandfather," said Bismarck, "served for three years under Frederick the Great, and told me this anecdote: An ensign made a blunder during the manœvres of troops at a review. The King, as was his wont when annoyed, fell into a violent rage and pursued the terrified ensign stick in hand. The young soldier ran for very life, and jumped a ditch, leaving the King upon the other side shaking his stick at him in a fury. Shortly after the escape of the ensign the colonel of the regiment came up to the King and said, 'Your Majesty, the young man committed a blunder, doubtless. I have just received his resignation from Your Majesty's service,' placing the document into the King's hands. 'I am sorry for it, for he was a good officer; but he can take no other step under the circumstances.' The King answered, 'send him to me.' The ensign was sent for, and came trembling, lest this time the stripes should in reality fall upon his shoulders, or still worse he might be sent to prison. Without any preface the King replied, 'Here is your captaincy, sir, which I endeavored to give you this morning; but you ran away so swiftly that my old legs could not catch you up.' One can imagine the delight of the ensign when he found that he was the recipient of promotion and not of blows."

Ladner Bee Profits: By John T. Bartlett

The ideal location of Mr. Reagh's apiary in a B. C. valley.

By Observing Local Conditions and Overcoming the Drawbacks, James Reagh, of British Columbia, Makes Nearly $1,000 a Year Profit on Bees.

Among British Columbia's many opportunities there must be given a high place to the production of honey. The story as told here by the writer, is most useful because it shows how difficulties are overcome and money made that is extremely tempting. In the October issue a Bee article by Thomas McGillicuddy dealt with the money end of it in Ontario. Herein lies the value of keeping Farmer's Magazines on file in the farm library. One has a wonderful reference department at his elbow.

THE tremendous money-making possibilities of beekeeping the writer never realized until he met James Reagh, of Ladner. Here was a man, by occupation a shoe merchant, who was making annual net profits of from $450 to $1,000 on a thirty-five colony apiary. He did all the work in his spare time. His total investment did not exceed $500. Yet he was located on a far from ideal honey district, and had to contend with the densest bee population in all British Columbia. Looked at from any angle this back-yard business appeared to have poultry farming beaten a hundred different ways, and the writer wondered why the get-rich-quick-by-farming variety of mail order sharks had never exploited it.

Reagh is a taciturn man. It was only after several unconventional interviews with him at his Ladner store, and divers visits to his apiary that a connected story of his success was secured. It appeared that he had always kept bees. "I like bees," he said frankly. Back in Old Ontario, he learned to handle the little honey-gatherers on his father's farm.

The bees there were what they are on, alas! too many farms—neglected workers in wretched accommodations—but Reagh got acquainted with them, and when in early manhood, he went West to Ladner, he immediately secured three wild swarms of bees and commenced beekeeping on his own account. Reagh's methods were progressive and businesslike from the first.

"The first five years I went slowly. The work was done in spare time and was a form of recreation for me. A Californian came to Lulu Island with some swarms of Italian bees and eventually I bought them off him. My colonies are a mixture of native and Italian blood. I find them easy to handle, and they are good honey producers."

For nearly twenty years Reagh has kept bees, gradually increasing the number of his colonies. He has never experienced a losing year. Indicative as this may seem that management of bees at Ladner is simple, the real fact is that the reverse is the case. Although there are more domestic bees in the Ladner district than in any other similar area in British Columbia, the apiaries are notoriously inefficient. It has been stated on good authority that in 1913 Reagh's apiary produced more honey than all the others put together.

The peculiar fall and spring seasons are a big hindrance. After the summer honey flow there is a dearth of nectar and pollen-bearing flowers, and the bees generally store honey dew, imperilling their health in winter. In the spring there are practically no flowers for the bees to work on from willow bloom in March to clover in June, with the result that brood-raising stops almost entirely in April and May. To prevent the gathering of honey dew in the fall and to ensure sufficient stores during April and May—these were the problems Reagh found obstructing his success.

He has read little bee literature. His contention is that beekeeping at Ladner being different from beekeeping at any other point in the world, is outside the application of the treatises on apiculture written for Eastern Canada and the United States.

Reagh circumvented Nature's antagonism, after various experiments, in a highly satisfactory manner. Just before honey dew in the fall, he filled a hive solid with frames full of honey. This he placed beneath a brood chamber from which all but the frames actually containing brood had been removed. When the brood hatched out, the frames were taken away.

How did this strategy work out? Just this way—the bees were compelled to cluster on the solid comb and, as there was no room for storage, gathered no honey dew. The honey introduced in the fall was sufficient to carry the bees through until June, when the clover honey flow commenced.

This method has been followed by Reagh for several years. It has never failed. Without doubt it is responsible for much of his success.

"When I first commenced to sell honey, I found that in the coast cities the local product did not have a good reputation. California honey was favored, which was strange, because the flavor is immeasurably inferior to ours. I had to seek buyers, a course I do not have to follow now. I recognized that quality, even though my production was small must be maintained, and so I divided my honey into four grades, selling it in the comb. I found that the dealers had objections to comb honey, and eventually I commenced selling extracted honey in glass jars. That method is now followed by a great many beekeepers in the States."

The jars, Reagh discovered, cost about five cents each. Labels he had printed in quantities of ten thousand, on them appeared the words: *"Guaranteed Pure—White Clover Honey—James Reagh, Ladner, B.C."* He did not attempt to blend the honey. Only that which was genuine white clover was marketed as such. The slight quantity of darker tinge was either consumed at home or sold in bulk.

The market was, and is, several high-class groceries in Vancouver. Shipments are made five or six times a season to each. Never less than twenty cents a pound jar is received. Reagh figures his average profit is fourteen cents a jar.

Reagh has acquired a reputation among the grocers of Vancouver and, were his output twice what it is—it has gone as high as 5,500 pounds per annum—he could sell it all without difficulty.

Recently a wholesaler made an offer which illustrates the extent to which honey consumers are befooled these days. For Reagh's entire crop he made this proposition: He would give a straight price of twenty cents a pound, unpacked, unshipped, provided he was allowed to use Reagh's name on the jars in which the honey was sold. Reagh suspiciously investigated, and found that the wholesaler intended to adulterate and sell the honey under cover of the producer's name. Needless to say, the proposition was scorned.

Honey is not the only source of income from the apiary. While like every good beekeeper Reagh restricts swarming, yet he sells a few swarms each year, the purchaser generally furnishing the hive. Reagh makes a habit also of attending farm auctions in the Ladner district and oftentimes picks up for absurdly low prices colonies which later with the hives renovated, bring $9 or so each. Although there are few profit-making apiarists in Ladner, yet almost every farmer plans to have two or three colonies. So there is, consequently, a moving market practically always. Around Ladner the country is thickly settled and the farmers are uniformly prosperous.

Reagh's apiary is located in his backyard, beneath apple trees. The space occupied, it is safe to say, would otherwise be unremunerative. The members of the Reagh family all are friendly with the bees, and the eldest son, particularly, has quite a share in the care of the apiary. The work is all done in spare time, and if totaled, would not equal that entailed by a flock of fifty hens. Reagh values his apiary at $500, inclusive of equipment, but most of this does not represent actual cash investment. So far as the development of the apiary is concerned, the bees have always financed themselves. The returns, in an average year, are fully 100 per cent. on a fair valuation. Where else can you find a profit-paying business like this?

An Ontario bee enthusiast looking for queen cell.

Most of the honey at Ladner is gathered in a space of ten days or two weeks in July. The flower is clover. The British Columbia lower mainland is not a place of hot weather. Just about the limit is 88 degrees, and the nights are always cool. The result is that most of the nights the bees cluster about the hives and do not work. For this reason, solely, storing of white clover honey on a large scale begins in British Columbia three weeks later than in Ontario, although clover commences to bloom almost simultaneously in the two places. The succession of flowers is not especially good at Ladner. White clover is the main reliance. The country is a dyked plain, with the hills several miles away, and dandelion, wild rose and buckwheat, beside the garden flowers of the town, are the principal other sources of nectar. Farther up the valley at the point where the plains meet the hills, there is a dazzling succession. It is enough to make beekeepers in many other parts of Canada turn green with envy. Just consider it—willow, dandelion, fruit blossoms, big-leafed and vine maples, white clover, alsike clover, fir-weed, euphorbia, with other sources of lesser importance. Throughout this district foul brood does not exist.

Reagh thinks there is a good opportunity for beekeepers in British Columbia, but novices, he says, must go slowly at first. Let them manage just two colonies the first year, is his advice. The market for local honey is good in British Columbia. The home production doesn't begin to meet the demand, and several thousand dollars' worth is imported annually from Ontario and California. The provincial Government has a Foul Brood Act in force, and two instructors, are constantly at work.

F. Dundas Todd, one of the provincial bee inspectors, states that in British Columbia the market for honey will not be adversely affected by the war. This year's honey crop, owing to the favorable weather conditions and a general improvement in management methods, is the largest in the province's history.

SAVE FLOWER SEEDS.

Owing to the war in Europe, Says W. T. Macoun, of Ottawa, flower seeds may not be so plentiful next year or the year after, in Canada, as a large quantity of the flower seed that is sold in the Dominion is grown in Germany, and the operations of growing and harvesting the seed there must have been much interrupted this year, and may be carried on with difficulty next year.

Canadian grown seed has been found to give very satisfactory results and we should advise every one who has a garden to be on the safe side and save some seed this year. Even if there is an abundance of imported seeds it will be interesting to compare this home grown with that from abroad.

The Roomy Farm Bungalow

A House With Atmosphere, and Practical Plans for Convenience and Comfort.

By GENEVIEVE

THE simple, picturesque, bungalow style of architecture is just coming into its own in farm house building, because we are just beginning to appreciate the value of "atmosphere" in the exterior of a home as well as in its furnishing. The new house of imposing dimensions with startling gables and painted balconies jutting out here and there to relieve the squareness, might belong to anyone of a hundred persons who had so many thousand dollars to invest, but when you build a bungalow with a purpose back of every feature, you make it your own.

A house built for healthful, cheerful living as well as appearance. Note the outdoor sleeping porches and the ample window space.

The beauty of the bungalow style of architecture is universally appreciated by the artistic home-builder in the country. The problem has been to build a house of this type which would afford sufficient room and living and working conveniences for the farm family and hired help. In planning this house, the aim has been to supply these conditions and to provide for interior comfort, charm and convenience in doing the housework. We are always glad to give any help we can in suggestions for remodelling old farm houses if the owner will send us a rough drawing of the lay-out of rooms.

The one-storey, rambling bungalow proper is rarely practicable for a farm house. Besides being difficult to heat it is too small to afford good living accommodation for the average family and hired help, where the latter have not a separate house on the place; but a roomy, two-storey house can be built, combining comfort and convenience with all the charm of bungalow architecture. The type shown here is a fine example. Being broad, and set close to the ground it has the appearance of being low, even while there is room for an attic under the ridge of the roof. The wide porch with heavy columns, the outside chimney, and the absence of any carved woodwork about the cornices give the substantial dignity becoming a country house, while a possible over-plainness is relieved by the groups of small-paned windows, a feature to be considered for the good lighting and pleasing window effects of the interior as well. The same regard for happy living conditions is responsible for the sheltered sleeping porches at the front and side.

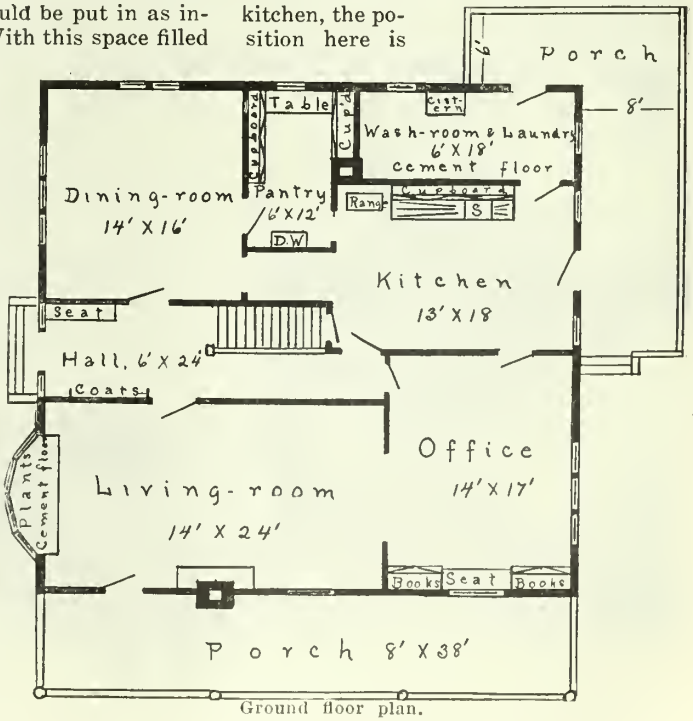
The walls of the house are covered with very light brown stucco, the window frames and cornices are painted dark brown, and the sombreness of this combination kindled into just the effect we want, by a bright red roof. There you have the spirit of the home expressed in the building, simple, dignified, unpretentious but piquant with a warmth and spirit of its own.

In planning the interior layout for this house, we will suppose that it has the usual position, the front porch facing the road, and the lane or drive running parallel with the side of the house. The side door will then be the main entrance, opening into a hall with the dining-room and kitchen on one side, the living-room on the other, and the office at the end. The stairs can be reached from any of these rooms without passing through another, so it is unnecessary to have a back stairway.

The living-room is the largest room in the house, and since it opens directly on to the front porch, the family will be likely to make the best use of the latter in the summer time. The large bay-window at the end of the room makes an excellent place for plants, and if it is to be used for this, a cement floor could be put in as indicated in the plan. With this space filled with flowers, large palms at the corners, and a seat in the recess at either end, we have a rather striking effect. Then the fireplace, especially if it be made of plain brick rather than polished tile revives something of the spirit of the days when every home was built around its altar.

Every farm house should have an open fireplace. It will not give sufficient heat in cold weather, but it will always be an efficient ventilator and by keeping the air of the room in motion will make the heating problem easier for the furnace. Of course that isn't the real mission of the fire-place. You'll never understand that until you have kindled the logs on your own hearth, turned out the lights, and stared at the blaze and thought for a while. Then you will know it to be a luxury that pays.

When the sliding doors between the living-room and office are pushed back, the house has a fine, spacious appearance; but the main object in having the wide opening here is that if a man has to spend an evening in the office he need not be shut off in a cell out of sight of the family. When not in use this room will generally be kept closed. It will necessarily look like an office, with its floor covering that mud tracks cannot spoil, its array of advertising calendars that the Man wants to keep, its desk and filing cabinet and safe, a piece of furniture which some farmers have not invested in, even when they keep considerable money and valuable papers in the house. There have been cases where a fireproof safe would have been worth more than a fire insurance policy. Apart from its business purpose, however, the office in the farm house has some possibilities. With book cases and comfortable chairs it makes a good reading-room, and an agreeable retreat sometimes when the house is full of company. With doors opening into both the hall and the kitchen, the position here is

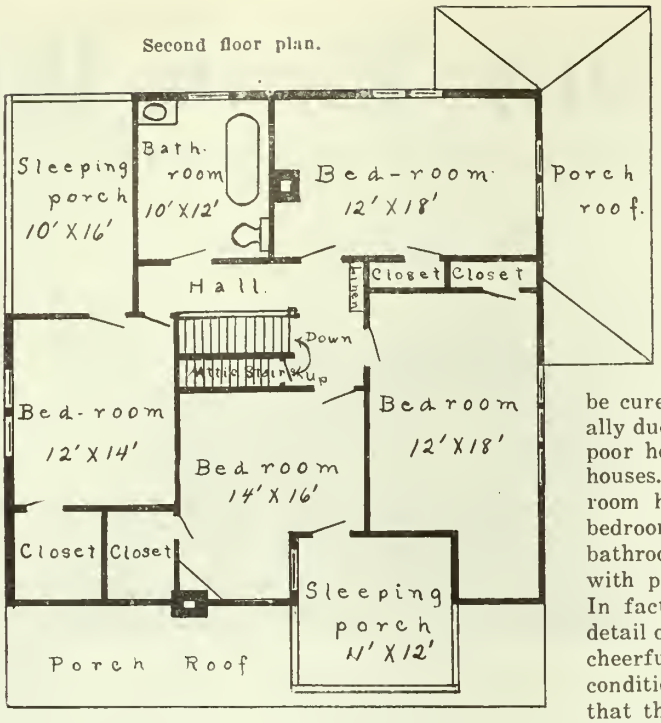


Ground floor plan.

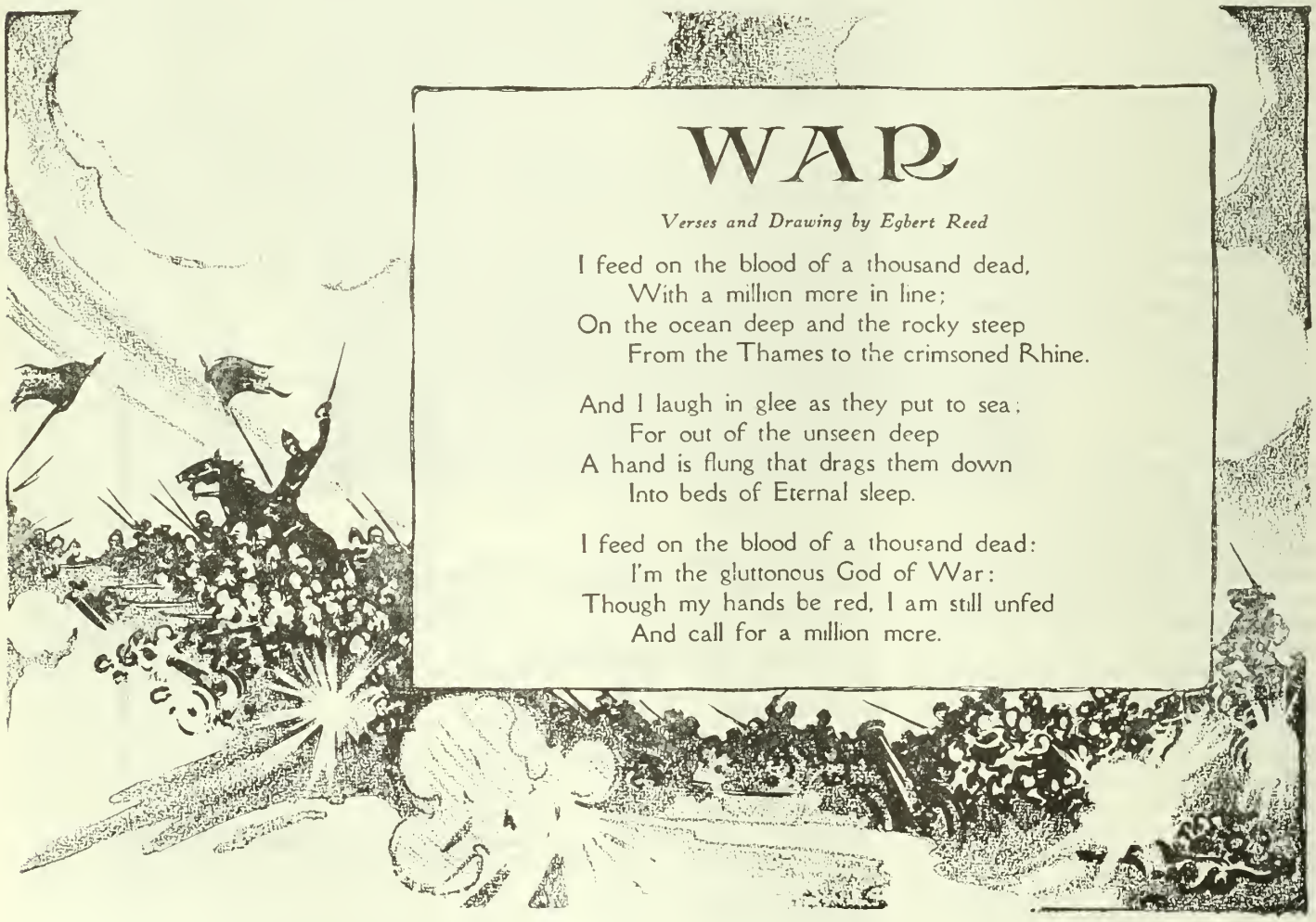
very convenient. The arrangement of the dining-room, kitchen and pantry is compact, to save unnecessary traveling in preparing and serving the three meals a day. A short hall runs between the kitchen and dining-room so that the men need not go through the pantry. The pantry cupboard, built in flush with the chimney, can be as deep as desired without crowding the working space, while the dumb-waiter and work table with a moulding board have a definite housekeeping value.

The kitchen being narrow, and the arrangement of stove, sink and cupboard compact and convenient, there will be little walking necessary in doing the kitchen work. The position of the chimney provides for a stove in the wash-room so the laundry work can be taken right out of the kitchen. The floor should be of cement with a drain opening. The pump from the soft water cistern is also here. The men don't have to come into the kitchen to wash up, and there is a place for the coats that usually have their pegs on the kitchen wall. The back porch running right around this corner of the house makes a fine outdoor workroom during the summer, and with a pulley clothes-line attached to a corner post, the disagreeable part of winter washing, hanging out the clothes, is made easy.

Second floor plan.



The most important features of the second storey are the sleeping porches. These are not little balconies built on for ornament, but well-sheltered, outdoor rooms, each opening from a bedroom. Perhaps the farm family consider outdoor sleeping a fad only fit for the overhoused city dweller; but the country has an alarming number of cases of ill-health and low vitality that could be cured by fresh air—conditions generally due to the small, stupy bedrooms, and poor heating appliances of the old farm houses. Very little space is given to hall room here, so we have four good-sized bedrooms, with a closet off each, and a bathroom. The rooms are all well lighted with provision for thorough ventilation. In fact the first consideration in every detail of the planning has been to provide cheerful, healthful, comfortable, living conditions in which a family might feel that they were enjoying all the advantages to be obtained from the open air of the country together with the benefits enjoyed in a city home.



WAR

Verses and Drawing by Egbert Reed

I feed on the blood of a thousand dead,
With a million more in line;
On the ocean deep and the rocky steep
From the Thames to the crimsoned Rhine.

And I laugh in glee as they put to sea;
For out of the unseen deep
A hand is flung that drags them down
Into beds of Eternal sleep.

I feed on the blood of a thousand dead:
I'm the gluttonous God of War:
Though my hands be red, I am still unfed
And call for a million more.

The Right Corn to Save for Seed

Methods and Results of One Farmer's System of Selection and Testing.

By IVAN B. THOMPSON

IF the old Indian legend of the origin of corn be true, Hiawatha was something of an agricultural seer when he named it "Mandomin, the friend of man." It is only during the last few years that Canadian farmers have come to realize that they have still no more faithful friend than the same Mandomin, but that like other friends, he must receive certain respectful treatment to give the best results.

Perhaps the greatest step in this direction, in those two districts where the corn comes to full maturity, is the careful selection of the seed ears. The corn crop on many farms is valued at hundreds of dollars, and yet there are farmers who will imperil the success of this most important crop by haphazard methods of selecting their seed. One cannot plant poor seed and reap a good crop. Just think a minute; if you plant poor seed, it takes the same ground, the same working and the same care as if good seed were used, and in the end, the reward is only a fraction of the crop that might have been obtained, had good seed been used.

Selecting the seed seems but a small matter, and does not really take much time, and the result is, that it is overlooked and entirely neglected. But these small wastrels must be cornered and exterminated if ever we reach that goal efficiency, which spells success.

But we are glad to note that there are many farmers throughout the corn belt, who are doing individual work in seed selection, building up and improving their own strains. Amongst those who have been very successful in this work is Mr. R. J. Wilson, of Charing Cross. He has been doing seed selection work for a number of years and he tells us that it has been the main factor in making corn a real live paying proposition on his farm. The cups and ribbons won by Mr. Wilson's corn at the various shows testify to the success of his methods.

There is an idea prevalent that seed corn selection is simply a fad—one of those new-fangled ideas that the busy everyday farmer cannot find time to attend to. But no idea was ever more erroneous; as is plainly shown in this case. Mr. Wilson is a practical farmer working a farm of two hundred and sixty-five acres, with the usual large amount of stock; yet he finds time for this work. In the brief description of his methods and results given here, we can see that there is no part that would interfere with the work on any ordinary farm.

The cups and ribbons won at various shows testify the success of Mr. Wilson's methods.

"If one kernel will yield sixty kernels, why not two bushels yield one hundred and twenty bushels?" The discussion of this question in the October issue of Farmer's Magazine revealed some interesting facts, among others that weak seed was responsible for a material falling off in crop yields. In this article we have a case of individual work in seed selection that pays well for the work involved. The story of Mr. Wilson's methods will make profitable reading for every corn grower.

"Yes," said Mr. Wilson, with a twinkle in his eye, "I remember the time when anything that had grains of corn on it was considered good enough for seed. It is only going to be planted anyway' was the common excuse. But it is not that way now. None but the very best will do, and even that is none too good. To begin at the first," said he, "in the fall when the husks on the ears have turned yellow I go through the corn field, with a basket on my arm to select the seed ears. First and always I have three requisites in view—three barriers that the grain must pass before I can consider it in the seed class at all. They are the following: First, well formed ears; second, ears four joints from the ground; third, ears from straight, healthy stalks with plenty of broad thick leaves. The ears should be well formed so as to contain the greatest quantity of corn—they should be about four joints from the ground so as not to produce a top-heavy stalk that the wind can easily blow over, and also, as a cob at the fourth joint matures more quickly than an ear at a higher joint; and lastly there should be a large quantity of good leaves to make the corn valuable as an ensilage or a fodder plant.

Having gathered the ears, I carefully husk them at once, and discard all the misshapen, small, or out of type ears and the rest I transfer at once to spiked dryers, that I make from a piece of electro-weld fence. I am careful not to let any of the ears touch one another while on the dryers.

The next problem is to dry the ears properly. I have tried out two ways of doing this. The first is to hang these pieces of fence holding the ears vertically between two wires, in the peak of my corn crib where there is a free circulation of air. The other way is to hang them in a small warm room directly over the kitchen, and after they are thoroughly cured I transfer them to a dry room where they will be safe from mice or rats. These two methods, I have found, give almost identical results only one year I got slightly better results from the heat-dried ears. But I believe, by using strong vigorous ears and exercising ordinary care, that either way will prove entirely satisfactory.

Here we are now with our seed corn selected, put away and dried. The next step is testing and this also is very important. There are various ways of test-

Continued on Page 53.

View of the cornfield and homestead on the Wilson farm.

A good price is returned for the nubbins by turning them into beef and milk.

Off to the Wars: By Robert E. Pinkerton

Illustrated by HELGE HAMRE

A Briton and a German Meet on the Way to Enlist

AT FIVE o'clock of a bright August morning Billy Throop rolled out of his blankets with no other thought in his unbarbered head than to cross the lake and spend the day in the raspberry patch. At ten o'clock he had started for Europe, singing "Rule Britannia," and at 10.05 he had taken his first prisoner of war.

At six o'clock hadn't know there was a war, nor had he suspected that there might be one. Billy seldom gave thought to anything more important than the placing of wolf bait or the setting of a fisher trap. But, as it was through such things that Billy made his living, perhaps he was not in a deeper grove than most of us.

At seven o'clock he met old Sam McIvor in the middle of White Otter lake. Half a mile away he knew that Sam had a new bunch of trouble. The swing of his paddle told it plainly, and Billy waited until his fellow trapper was alongside.

"What's wrong, Sam?" he asked.

"Everything, Billy, everything," was the mournful answer. "We'll starve this winter sure. There's no way out of it."

"What's the matter? Have they quit making cartridges and snare wire?"

"Worse than that. There won't be any market for fur this winter because Europe won't buy any. Sugar's gone up a dollar a sack, and flour's going to be cheap at any money. A poor trapper'll just naturally starve."

"What's eatin' Europe that they won't buy any fur?" asked Billy, genuinely interested for once in Sam's troubles.

"This terrible war, son, this terrible war. It's the greatest war the world has ever seen, and no one knows where it'll end."

"Are we fighting?" demanded Billy eagerly.

"Yes, we're in it, too. The telegraph fellow in the station heard a message two days ago that England declared war on Germany."

"And that means Canada, too?"

"Yes, Canada, too."

The mournfulness of Sam's tone had a depressing effect for a moment, and then Billy remembered that Sam would be mournful while he was taking a silver gray fox from a trap.

"Whoop!" he shouted as, with a mighty swirl of his paddle, he turned his canoe and started back across the lake.

"Where are you going?" cried Sam.

"To the war," answered Billy, without missing a stroke or turning his head.

Billy paddled straight to his cabin. It was the work of half an hour to put a blanket in a packsack. Then he took all the cartridges he could and, cleaned his rifle and hurried down to the canoe without stopping to close the cabin door. Before nine o'clock he was headed for the railroad, fifty miles distant, singing "Rule Britannia" as he paddled.

There was nothing deep or intricate in Billy's reasoning. Sentiment governed his actions as often as logic, and "how?" or "why?" rarely detained him. The main idea was all he cared about. Details he ignored or trod under foot.

Thus, when Billy started to war, the whyfor of the fighting or the means of getting into action never entered his head. He wanted to go, and he started. If he found rapids in his way, he'd run them or make a portage. But he wouldn't worry about them until the white water showed over the bow.

Billy's precipitance was not due to a martial spirit. In all his life in the wilderness he had not had a quarrel. He had even passed slights with a laugh, for he was so lacking in conceit that he didn't consider himself, as plain Billy Throop, of much importance.

But now, with England at war, was another matter. He was still Billy Throop, but a subject of the King, and he knew the King needed men like him. Even then, where there could have been reason for conceit, he lacked it. There is no more resourceful, self-reliant, competent individual in the world than the Canadian woodsman, and there were few better than Billy.

Editor's Note.—This war story presents an entirely new phase of the war situation—the relation of individuals on opposite sides. Two men meet in the Canadian north—a young Briton and a German. The only possible cause of enmity between them is a quarrel in far-off Europe that one at least knows nothing of. What happens makes an interesting story; and it is told in Mr. Pinkerton's best style.

Billy's only idea, however, was that England, and that meant Canada, was at war and that England needed men. The call was late in reaching through fifty miles of forest and lakes, but he was ready when it came. He knew little about armies and navies, nothing about discipline, but those were details, and, as he paddled, he pictured himself potting Germans from behind clumps of spruce or trailing fleeing Teutons through the muskeg.

As he neared the south end of White Otter lake, Billy had also developed a fair amount of animosity for Germany and Germans. He didn't know anything about them but the mere fact that they were the objects of his country's wrath was sufficient. He swung the canoe up to the shore at the end of the portage with a final burst of his song, only to stop in the middle of the last line. Or, rather, he ended with "B'jou', b'jou'," for a man was sitting on a rock at the edge of the water.

"Good morning," the stranger replied, and Billy felt a tingling stripe down the middle of his back. Never had he heard the words spoken with just that accent, and to him it was a subconscious warning, a warning recognized only by men who have developed a sixth sense in a life in the open. He glanced down to see that his rifle was ready.

"Could you tell me, please, from where you are going?" asked the stranger as Billy stepped carefully ashore.

"From where I'm going?" repeated Billy with some amazement. "Sure, I'm going from home."

"And to where iss it you are going?"

"I'm going to town."

That "iss" doubled a growing mistrust and he faced the stranger warily.

"Then perhaps it iss that you could take me?"

"Perhaps I could, but where's your canoe?"

"That I do not know. Since day before yesterday it has been lost already."

The "already" settled it. Billy, on a trip to Winnipeg three years before, had seen two German comedians in a theatre. This man didn't talk like them, but the "iss" and the "already" were the same.

"Say," he demanded, "are you a Dutchman?"

"A Dutchman I am not. A Dutchman comes from Holland. I am a German."

The light danced in Billy's eyes. He had not hoped to find the foe so soon. But his woods caution prevented his doing anything rash. It might be a trap. He turned with great unconcern to his canoe and lifted out the pack and rifle. Then, the rifle in his right hand, he faced the man on the rock.

"So you're a German, eh? Well, just crawl down off that rock and don't make any funny moves. You're my prisoner."

"But why should you make of me a prisoner? I have no money, nothing to steal."

"I'm no robber!" exclaimed Billy angrily. "I don't want your money. You're a prisoner of war." Then he added, when the other failed to show comprehension: "Didn't you know we're fighting?"

For the first time the expression of the stranger changed.

"You mean that it is declared, the war?" he asked eagerly.

"You bet, Dutchy. We're fighting."

"Then I would wish to get to the United States that I may return to fight with the Kaiser."

"If wishes were sleigh dogs, every Indian in the bush would be driving through the front door of a wholesale liquor store. My wish is the one that goes this time,

and you mooch along with me to Port Arthur. They'll be waiting for you there."

The German had slid down from the rock and stood before Billy. For the first time the woodsman noted the hollow cheeks, the dull eyes. Then he remembered what the other had said about losing his canoe.

"You look sort of peaked, Dutchy," he said in a less belligerent tone. "Had anything to eat lately?"

"Not for two days, since I have lost myself."

Billy instantly forgot the war. He knew too well what it meant to be lost in the woods; he had been hungry too many times himself.

"Get back onto the rock and take it easy while I rustle some grub," he commanded. "There's no reason you should starve just because you're a German."

Billy had out his axe before the stranger was back on his seat. In the next five minutes the "prisoner" saw faster movements than he had ever thought posible. Wood was cut, a fire started, a kettle hung in the blaze and lard heated in a frying pan. A loaf of sour dough bread was sliced and dried moose meat denuded of its black casing and laid in the grease.

Billy didn't talk; he was too busy. The German didn't speak because of amazement and a damp mouth. The odors that reached him were far more savory than ever emanated from a Wiener schnitzel or hassenpfeffer. When at last the meal was ready, Billy watched his prisoner with interest.

The German did not eat rashly or hurriedly, however. He proceeded leisurely, but surely, without the rush with which the bushman attacks his three meals a day. Talking during meal time was against Billy's code, but he saw that the German's pace permitted time for words. And he was curious.

So, when the meal was finished, Billy had the story. Karl Sussdorf, graduate of Bonn—he didn't tell Billy that, or some of the other things—son of a prosperous manufacturer, had come to America to study manufacturing methods, and, incidentally, to invest some of his father's money. A gold mine in western Ontario had interested him, and he was returning from an inspection of the property, with an Indian guide, when he had wandered from camp one evening and never found his way back. When Billy met him, two days later, he had about given up, and, weak from hunger, had sat down at the end of the White Otter portage to await the possible chance of being found.

"Well, Dutchy, that's hard lines," was Billy's comment as he picked up the dishes and began to wash them. "Here you are, lost in the bush and wanting to get back to fight me, and here I am, hurrying out to fight you, and we meet right here on White Otter portage. But I suppose that's one of the chances of war, as they say. And, as the chances are against you' we'll just mooch on down to the railroad."

"I suppose I ought to tie you up," he said, "but that would be a lot of bother. If you promise not to try to run away or hit me over the head with the axe when I ain't lookin', I'll let you go that way."

"I give you my word, Mr. John Bull, that I will not make an escape or with the axe or anything else hit you. I have served in der Kaiser's army, and I know of war the rules, as do you."

"Me? I don't know anything about the rules. I never even saw an army. But I'm willing to take a man's word."

Together they journeyed the rest of the day, Sussdorf in the bow with a sincere but inefficient blade, and Billy, again singing "Rule Britannia," heaving the canoe along from the stern. He was not angered by the lack of assistance he received. Who'd ever expect a Dutchman to paddle anyhow?

Despite the German's assurances, Billy was watchful. He kept the rifle near him and, on portages, he made Sussdorf take the canoe and go ahead. They had another meal in mid-afternoon, for Billy intended to paddle until late before he made camp. At Twin Lake portage, however, the woodsman saw that the two days of fasting were telling on his prisoner's strength, and he decided to make camp at once. The tent was up and the meal consumed quickly, and five minutes afterward Karl was asleep.

Billy did not need rest, nor was he in the mood for it. There was still nearly two hours of daylight, and he had often wanted to investigate the country beyond the ridge at the foot of which they were camped. So, assured that his prisoner was sleeping soundly, he took his rifle and disappeared in the brush.

When Billy returned an hour later, two canoes were leaving the portage southward bound. He ran across the open space to the tent, the first genuine anger of his life boiling furiously.

"I'll catch him yet," he whispered to himself as he ran.

He threw back the flap of the tent. Karl was just crawling in between the blanket folds.

"Well, holy mackinaw!" Billy cried. "You didn't sneak, did you?"

Karl looked up, blinking, slowly comprehending. Then he stiffened up suddenly.

Continued on Page 63.

Karl wrung his hand excitedly. "I can't thank you," he said. "Thank nothing," exclaimed Billy. "I'm fighting Germany, not a German, but I'll meet you in Europe next week."

The Woman Who Doesn't Look Back

How the Advantages of the City Came to an Isolated Farm.

By ETHEL M. CHAPMAN

After all that is said about city advantages from a woman's viewpoint the city really has nothing essential to happy and elevating living that cannot be brought out to the country. This takes time and the courage to work and wait, and it must come through people who know how to appreciate improvements. The difficulty is that these people often attach so much importance to the non-essentials that they think they cannot live even for a short time without them, and the farm is abandoned with all its possibilities for a commonplace life with the crowds such as herds of humans have lived and will still live for generations.

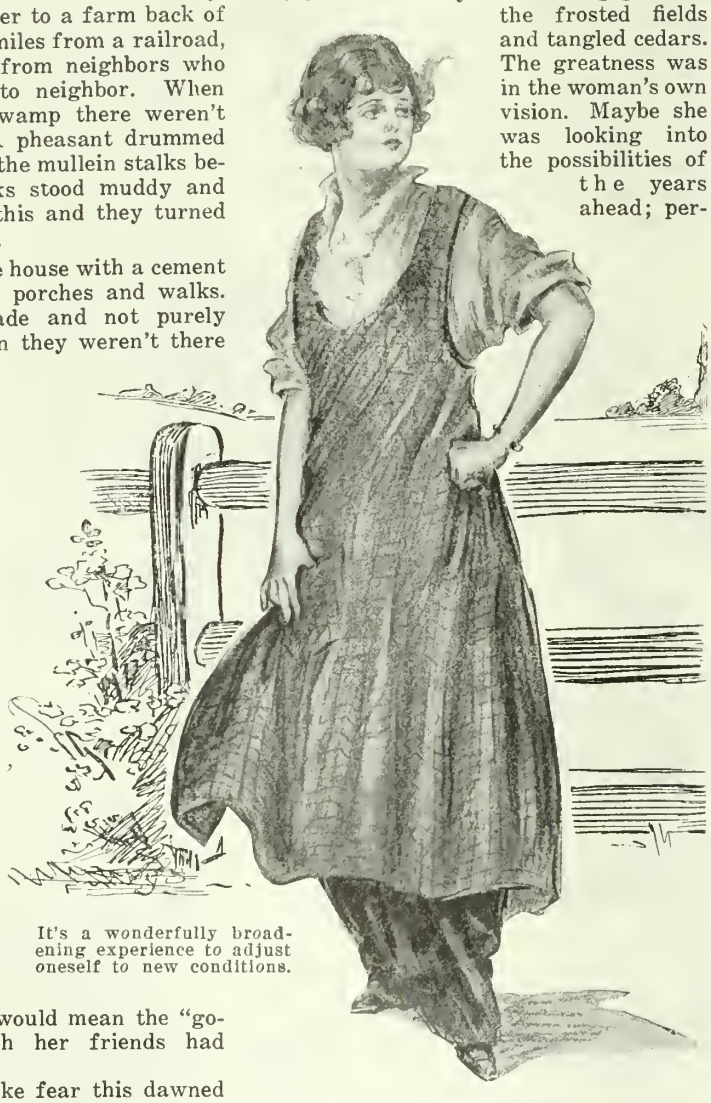
ON one of those days in November when the earth and sky look as though they have been dipped in wet ashes, and a foreboding dampness hangs in the air, Joe Evans was bringing his bride home to Cedar Farm. Occasionally they passed a little, bare, weather-streaked house with a geranium in a tomato-can peering through between the curtains, and invariably the curtains were parted and the women inside looked up from their baking and butter-working to gaze after the new arrival. But Joe knew that with their work, including everything from milking the cows to making their men's shirts, they wouldn't have much time for company with Mary. He had brought her from one of the most cultured suburban homes in the country, and he was taking her to a farm back of a cedar swamp, ten miles from a railroad, and unsociably far from neighbors who had never learned to neighbor. When they came to the swamp there weren't any more houses. A pheasant drummed on a hollow log, and the mullein stalks beside the wheel-tracks stood muddy and ragged. A mile of this and they turned in at their own gate.

It was an old stone house with a cement newness about it in porches and walks. They were homemade and not purely ornamental, but then they weren't there to be looked at. Like Joe himself, the place had nothing for show, but was good and durable to live with. That was plain already in every detail of the preparation he had made for his wife, from the kitchen wood-box that could be filled from outdoors, to the wardrobe he had built where it was impossible to put in a clothes-room. It was the beginning of a real home all right, but it was the only home in sight. The social and "cultural" interests that had colored the girl's life would be impossible here. It would mean the "going back" of which her friends had warned her.

With something like fear this dawned on Joe that night as he watched her stand at the window for a long time, looking out at the moon shining on the frost-covered field that sloped down to the cedar swamp. Then she came back and stared at the fire, until, because he didn't know what else to say, he asked, "What is it?"

"Isn't it—great!" she said.

Now there really was nothing great in the frosted fields and tangled cedars. The greatness was in the woman's own vision. Maybe she was looking into the possibilities of the years ahead; perhaps it was quite enough to live in the present; it is more than likely that she was not unaware of the difficulties of her new life; but because she didn't look back, because she saw the best in what she had and forgot what she couldn't have, she said, "Isn't it great!" If she had any misgivings, she would get a lot of moral support just from expressing that.



It's a wonderfully broadening experience to adjust oneself to new conditions.

It is surprising how much discontent we make for ourselves through indulging in comparisons—comparing what we know at home with what we see only on the surface elsewhere, and forgetting that the surface of what is prepared for our scrutiny is always polished. She might have looked back to her old home with its mahogany and Turkish carpets until she became wholly ashamed of her own humble furnishings, but she knew that the furniture is a secondary feature of a home. She might have remembered the free hospitality of her father's house and the train of interesting people who kept them in touch with the best things in the world, but there could be hospitality here, too, and the interesting qualities of the people would just be a matter of discovery. She might have had some regret for the social gaiety of the little home city, but she hadn't had a chance to try out just how much of that could be brought out here. Altogether she might have just dropped her dreams there and then—women have done it before—and settled down to a sort of martyred indifference. But because she wasn't made for such things she gathered up the best ideals her old life had taught her and set to work to develop them.

It's a wonderfully broadening experience to adjust oneself to new conditions without losing the things worth keeping. It is almost as wonderful to make one hundred dollars furnish a house with as much artistic effect as could be obtained with a thousand. When this home was finished it was quite as charming in its own setting as the most up-to-date mansion in a city square. There were no hardwood floors, but an oak linoleum had the same effect, was more yielding to the feet and easier to keep clean. There were no Oriental rugs but the woven rag mats were just as classic. (By the way, there is some economy in the present colonial style of furnishing that has revived the popularity of the old-fashioned rag carpet rugs for the most costly homes). Chairs of walnut and Spanish leather were out of the question, but somewhere, in every millionaire's house you find a little sitting-room in rattan and chintz! She used this in her living-room and the whole outlay was twenty dollars. Then because she liked antique furniture, she took an old kitchen table and cupboard from the cellar, gave them several coats of white enamel paint, and called the one a reading table and the other a bookcase.

With a hand-worked scarf put crosswise over an enamel table and a shelf for magazines below, you would never guess

that it had been a part of the daily dish-washing for generations; or with glass doors and brass knobs on a white cabinet of bookshelves, it is a matter of no importance that the same shelves have held pickles all their lives, with the woodwork painted white and the yellow flowered chintz matching the wallpaper and curtains the room was a masterpiece of harmony, and one to be remembered because it had *atmosphere*. That's the only thing that matters in the make-up of a home anyway, except that the family be proud of it, and they were—so proud of it that they never tired of inviting people to see it, and this was the beginning of a hospitality that made them never want for company.

For after all that is said about the isolated life of women on the farm, the woman who really wants company can generally get it, unless she doesn't like her neighbors, or thinks she hasn't time for visiting, or makes such a fete of her entertainments that they leave her tired out. The woman who had watched Joe bringing his wife home supposed she wouldn't care for country folks, and never thought of calling on her, but when she made advances herself, they warmed up at once. They came to see her, and because they were taken right into the home life without formality they came again, and she went back, and they learned a good deal from each other. She didn't cut off the old acquaintances either. Why should she, If they did smile in secret at the primitive service of the little church, they always felt a keen regret at leaving the fields and orchards. If they had come from velvet drawing-rooms and French boudoirs, they appreciated the airy bedrooms with grass-bleached linen and lilacs blowing at the windows, and they realized that the house was perfect in its environment. Of course they couldn't just accept the environment, but because the family didn't attempt to make any apology for it they went home with a wholesome respect, and some perplexity as to what gave the dignified tone to the place. For one day in the atmosphere of the home was an inspiration not easily forgotten.

One night during the winter, when the social season in town was at its height Mary's best college friend, tired out with the annual round of events stepped onto the platform at the little country station, and Joe drove her out to the farm. She was not unconscious of the spell of the still white country, the tingling stars, the hard smooth track cut through snow banks, the prancing horses' breath in the frosty air, and the bracing bigness of it all. Then the kitchen door opened and the warmth and lamp-light flooded out. It was a home-coming not experienced by people who jump off a street car and run up the steps. The fireplace was piled high with blazing cordwood, the supper was hot, and just like Mary used to cook. When she crept between the blankets that night, sleepy from the frosty air and the fire, she thought, "Well this is living!" She thought that again several times during the next week. She forgot all about the skating and toboggan parties, because they had them here on the pond in the flats, and on the hill behind the barn. When they tired of that they read aloud a new book that she could never have found time for at home. She was surprised to find Mary a little in advance, intellectually, of any of the girls at home, but, of course, they hadn't time. What was there worth while that they had time for anyway?

But before the second week had passed the call of the crowds asserted itself, and the girl from town was genuinely sorry for Mary. "Couldn't you come back with me for a while," she urged, and added a list of attractions calculated to move a nun from her cloister. "Wouldn't you like to look back just for a day or two, to break the—just for a change? I know it's lovely here with the trees and the woods, and Joe, for well, a farmer is the only man that's different from other men, but—" That was very indefinite so she explained: "I mean a farmer seems to be the only man who has a personality that goes below the surface."

Mary smiled as though she had discovered that long ago. Then she replied: "I don't want to go back, and it isn't the fields and the woods at all, but my life is here, and what we want of the culture things we will have to cultivate here. It isn't impossible either."

Then the boys came and after that she couldn't look back. Everything lay ahead. With the natural maternal ambition for her children, she began to wonder how they could have the city advantages combined with the benefits of farming. An outdoor life and outdoor work might be physical assets, but alone they would not turn out gentlemen. The country school was inferior in everyway and it was the only public organization in the district. But why was it inferior? Why was the building so poorly heated and lighted? Why did a good teacher stay for only a few months, and why did the parents never go near the place? Just because no one was interested, of course.

If Mary had tried she might have persuaded her husband to sell the farm and buy a place in town where the boys could get an education, but she had married a farmer, and life is too short for many apprenticeships. Besides she knew the advantages of growing up in the country. It was much better to try to improve the school. This was the first public work she had attempted, and womanlike she didn't go after it in a public way. She talked to the mothers and together they cleaned and redecorated the schoolroom. Why not? They painted their own kitchens and some of them whitewashed their own chicken houses. Then they stirred up an agitation for a furnace and more windows, and, of course, they got them. It was the beginning of many improvements.

There was no danger of Mary "going back" now. She was the oracle for the inquiries from three developing minds, and she just had to keep pace with the world outside the horizon seen from her own back door. For the next fifteen years she was so busy following her boys through school and college that her own education had a thorough rejuvenation. She made friends of the teachers, and studied welfare movements, until the little school became a live community center, with debating clubs and winter courses and lectures from men who were promoting the best things in country life.

And at last this farmer and his wife who hadn't looked back began taking trips to the cities around, but they were not merely pleasure excursions. The swamp had been drained and pretty well cleared, the farm had prospered mightily. Now they were going to build a house and they were trying to find a model good enough. It would have every essential comfort and convenience of the best city residence. "Very likely," you think, "a man who has lived all his life back of a cedar swamp isn't going to concern himself so seriously over a new-fangled house." But a man who will substitute a cistern for a rain-barrel when he has nothing will not hesitate over a water system as soon as he can afford it, provided he has a wife who can convince him that it is worth having. A man who will stop to build a cement porch around an old house with his farm still undeveloped, is not indifferent to having a beautiful home.

The old house is Joe's garage now. The district has new roads and new schools and new churches, and almost within sight of the old homestead three young men are building up new farms and helping to build the community. Over in a city a few miles away Mary's old friends are restlessly living along in the same insipid luxury, just as they did before they were married. They have never helped to develop anything. And the woman who didn't look back, still has a habit of looking out the window just as she did one night twenty-five years ago and coming back to the fire and saying, "Isn't it great!"

THE TALKING LEAVES.

Arthur Goodenough.

When the haze of the summer is on the hills.—
And the gold of the summer has splashed the sheaves,—
And the wind in the wood is never still—
It is then you may hear the talking leaves.

When the grapes are purpling on the vine,—
And the silver cable the spider weaves
Is laden with dew-drops jewel fine,—
You may hear the speech of the talking leaves!

When the barberries cluster ruby red,—
And the chattering jays are thick as thieves,—
And the ripening apples hang o'erhead
Is heard the tone of the talking leaves.

They whisper of mysteries—histories—
That men have never set down in books;
Of marvels and omens and prophecies
And the unwrit lore of birds and brooks.

They often talk of forbidden themes,—
Of themes forbidden to you and me,
And steal the tones of the winds and streams
And weave them into a threnody!

—From the *Republican.*

Chemicals for Cleaning

Because Eve Didn't Use Them, Women Ever Since Have Been Dubious.

By WINNIFRED MARCHAND

Among the real labor-savers for the housekeeper, certain cleaning chemicals, intelligently chosen and judiciously used are well worth the money invested. They should be well tested, however, before being used on perishable furniture or fabric. We can guarantee that anything mentioned in this article will not be harmful if used as directed, and all have been chosen with a view to lightening the work of the farm housekeeper particularly.

THERE are two methods of cleaning; mechanical methods, where the worker actually scours or rubs the dirt away, and chemical methods where she lets certain chemicals absorb and remove it. Because Eve didn't know, or had no use for the latter, women ever since have been dubious of any means of keeping their homes clean except by the sweat of their brows. They have not figured out that the furniture as well as their own strength, will wear out faster under the scouring and scrubbing, than it would if they had studied and applied the chemistry of cleaning.

CHEMICALS FOR WASHING.

Nowhere is the intelligent use of chemical cleaners more helpful than in laundry work. Women have appreciated the value of soap from the time they knew how to make their own leach of hardwood ashes. Then they developed a keen discrimination between good and poor soaps, those that would or would not remove the dirt without injuring the fabric, and now they have found other substances with cleaning properties that no ordinary soap ever pretended to possess. These must dissolve dirt without injuring the fabric, so strong alkalies, acids or chlorine are barred out, except in the case of very dirty hand towels, dusters, etc., where the mechanical method of hard rubbing would weaken the fibre just as much. Gasoline, turpentine, kerosene and paraffine all dissolve dirt without injuring the fibre, but each has its disadvantages. Gasoline, about half a cup to a tub of soapy water is particularly good for soaking clothes, especially where we do not want to boil them, and it will not injure colors. Some people use it in boiling clothes as well, but it is safer to keep gasoline some distance from a fire. Turpentine is excellent both for soaking and boiling clothes, especially to whiten curtains saturated with smoke. About three tablespoons to a boilerful of clothes gives good results. Kerosene if mixed with sufficient soap cleans clothes without much rubbing. To get the best results and prevent a scum settling on the clothes, boil together a tablespoon kerosene, an ounce of washing soda and a pound of soap, put this into a boiler of boiling water and add the clothes previously wet or soaked. Dry dirty clothes put into a hot mixture, will, of course, be boiled dirty, sometimes past ever getting the stains out.

If rightly handled, however, no chemical will dissolve dirt and whiten clothes so readily as paraffine. The common difficulty is that it settles on the clothes, either because it has not been combined with sufficient soap, or because the temperature has been allowed to fall below the congealing point of wax. In putting a boilerful of clothes into the tub at once, the clothes themselves will heat the water sufficiently, but in washing a few clothes the water may have to be heated. It is also important that the boiling water, or the water into which the clothes go from the boiler, should be soft or softened. Otherwise the lime will eat up the soap, leaving the paraffine free to settle on the clothes.

So the first thing in paraffine washing is to *keep the water hot.* Shred one cup paraffine and one-half pound soap, melt in a quart of hot soft water and put into a boiler of hot soft water. If the washing is of three or four boilerfuls, prepare twice this amount and use half for the first boiler and the remainder for the others, without changing the water. Wring the clothes from cold soapy water in which they have soaked over night and boil twenty or thirty minutes in the paraffine mixture. Turn into a tub of hot soft water or a washing machine, wash, rinse and blue. This method cannot be recommended too highly for heavy farm washings. While the paraffine whitens as well as cleans the clothes it does not injure the colors of prints and shirtings. Clothes washed in this way iron very easily.

White linens and cottons that have become yellow or badly stained can easily be whitened by using javelle water, a home-made preparation consisting of one-half pound chloride of lime, and two pounds washing soda to two quarts boiling water. Dissolve thoroughly, strain through a cheese-cloth and bottle tightly. When fresh, dilute with three or four times its volume of water; when old use full strength. Let the articles stand in this until the stain is removed, then wash carefully in fresh water until not a trace of odor remains, or the alkali may leave a yellow burn. A little vinegar might be used in the water to counteract this.

GETTING RID OF DUST.

We all realize now, that flying dust is not only disagreeable but dangerous. We get rid of a good deal of it when we have our carpets made into rugs that can be taken out for cleaning, or better still when we invest in a vacuum cleaner, but even then in the daily sweeping and dusting we are likely to stir up and inhale a good deal of it. A string mop and polish for floors, and a dustless duster for furniture. would gather and hold the dust as it was wiped up. The dustless duster is just a cotton cloth treated with some kind of wax-like chemical which will not come out when the cloth is washed. A very good substitute can be made at home by dampening a cloth with kerosene, only we must remember that kerosene will cut varnish and cannot be safely used on highly polished furniture.

BRIGHTENING THINGS UP.

For renewing the hard, bright finish on varnished furniture, an excellent polish can be made at home. Take 8 ozs. linseed oil; ½ pt. vinegar; ½ oz. alcohol; ½ oz. butter of antimony; and ½ oz. muriatic acid. Put these in a bottle and shake until they are thoroughly mixed, take a cotton cloth and rub with the grain of the wood using as little polish as possible then rub well with a dry cloth to remove the polish, and finally polish with a soft flannelette cloth. This polish should not be used on a piano case. For this take a few drops of olive oil on a cloth dampened with water, and rub a small area at a time, drying thoroughly with another cloth and finally polishing with a piece of flannel or chamois. Piano keys can be cleaned best with a cloth wet with alcohol, but if this is allowed to touch the case it will ruin the varnish.

If we are so fortunate as to have any brass or copper kettles, jardiniers, candlesticks, etc., we are likely to find them becoming badly tarnished every few weeks. They can be made very clean and bright by washing in soap suds and scouring with a paste of rotten stone and sweet oil. If badly tarnished it may be necessary to make a weak solution of oxalic acid and rub it over the article before washing it, but the acid is a dangerous thing to use if there are any breaks on the skin of the hands.

The old brick fireplace can also be brightened with the following reddening mixture:—1 oz. common glue; 1 tablespoon alum; ½ lb. Venetian Red; 1 lb. Spanish Brown, and 1 gallon water. Dissolve the glue in the water over the fire, and while hot, add the alum, then the Venetian Red and Spanish Brown. Mix well and apply with a paint brush.

CHEMICALS IN THE KITCHEN.

The kitchen sink, which is one of the farm housekeeper's most valuable conveniences may also be the cause of no little trouble, through the pipes becoming coated with grease and clogged until the flow of water may be stopped altogether or dangerous gases come up into the house. This can be prevented by flushing the sink once a week with a solution of washing soda. Put about one-third cup of washing soda in an old pot

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The Agricultural Review

The Best Selections From Contemporary Farm Journals and the Publications of Experiment Stations. The Cream of Information.

Where Popcorn is Grown

About an Average of $30 per Acre to the Grower is the Estimate

From The Nebraska Farmer.

THE consumption of pop corn in Canada, especially in the cities is quite an item annually. While a few dollars are made here and there by local growers, the great bulk of the corn comes from the United States. The following description from North Loup, Nebraska, gives one a little insight into the business.

More popcorn is produced in Valley county, Nebraska, than in any other area of like size in the United States, save one. The growing of popcorn there is an industry, the same as the growing of any other crop, and it is a profitable one when the grower receives a normal price for his crop.

North Loup is in the center of the popcorn industry in Valley county. About twelve years ago the business men of that town decided to originate something new in the way of entertainment for the people of the town and the country surrounding it, and the result was an annual popcorn festival at which everything is free.

Mr. W. G. Rood, the president of the popcorn association, and the editor of the North Loup Loyalist, was in charge of the popping proceedings. Last year 14,000 sacks were given away. The popcorn is sprinkled with salt and about 300 lbs. of lard were used.

The growing of popcorn began in the North Loup section in 1892. That date probably marks the beginning of extensive popcorn culture in any section of the country. George Smith, then a resident of North Loup, was the man who was possessed of the "idea that popped." The first year he planted ten acres. People laughed at him and thought he was crazy. The following year he planted forty acres and then his neighbors began to "sit up and take notice."

There was a good demand for popcorn from the North Loup section and others soon followed Smith's example. Mr. Smith now lives in Los Angeles, California, and is wealthy, his start toward prosperity being obtained by the growing of popcorn in Valley county. The consumption of popcorn has increased wonderfully since the industry first began, and now popcorn is shipped from Valley county to nearly every town and city of any size in the United States.

It is not uncommon, to find eighty acres of popcorn on one farm, and occasionally there is a 160-acre field, but the average number of acres grown on the farm is much less. In former years from 500 to 700 carloads of popcorn have been shipped from North Loup, but this year the shipments of the 1913 crop have been between 100 and 150 cars. The popcorn acreage in Valley county is probably between 10,000 and 12,000 acres at the present time.

There is just one standard variety of popcorn—the White Rice—but two other varieties are grown in Valley county. Queen's Golden and White Pearl.

The growers usually sell their popcorn directly to the dealers and deliver it at husking time. Some farmers store their corn and hold it during the winter for higher prices. At the present time the price of popcorn is $1.50 to $1.75 a hundredweight at North Loup. That is for the 1913 crop. No price has yet been established for the 1914 crop. The highest price that North Loup dealers remember being paid for popcorn was $3.65 a hundredweight. At that time the demand was very great and all the other popcorn sections were short on supplies.

At $1.50 a hundredweight for a yield of 2,000 pounds to the acre there is considerable profit in growing popcorn. That would amount to $30 an acre. However, the cost of husking the crop is much greater than for field corn. Popcorn pickers receive from 15 to 20 cents a hundred pounds, depending on the season and the crop. The same year his neighbor across the road received a profit of $80 an acre from land that was planted to popcorn.

An example of soil drifting. It was a land crime to take the trees off this soil.

Electricity Explained

Some Definitions and Explanations that Will Help the Farmer to Understand Electric Lighting Plans

From Farm Engineering.

SINCE the introduction of the gasoline engine to general use on the farm, with its well-known capacity for handling so efficiently many of the problems connected with the science of farming, numerous interesting labor-saving devices are daily being invented and perfected for use with the engine, to aid the farmer in his amazing advance toward the ideal in farm life.

The problem of efficient lighting by electricity is receiving more and more attention from the modern farmer, and with the almost universal use of the storage battery lighting system for farms, automobiles and boats, the old troublesome methods of lighting are rapidly disappearing. As the use of electricity on the farm becomes more general, there is an increasing desire to learn more about these systems.

Considering that the storage battery is one of the oldest and simplest forms of controlling electrical energy, it still remains the most reliable and efficient method of lighting now in use to-day for the farm. The storage battery has no moving parts, and, therefore, requires little attention, but strange to say its operation and functions are still more or less of a mystery to a great many people.

TECHNICAL TERMS EXPLAINED.

As many of the technical terms used in connection with electricity are confusing to those unfamiliar with the subject, and

in order to fix clearly in the mind of the reader the relation of the various terms to each other, it is thought that the following list of the words most frequently used in connection with low voltage systems, together with their definitions, will be an advantage:

Part of the staff of the Saskatchewan Dept. of Agriculture, some old timers of the Abernethy district and Premier and Mrs. Scott, Hon. W. R. and Mrs. Motherwell. The four are standing in centre, with Mr. Scott holding a baby boy.

Ampere — The practical unit of electrical current. Such a current as would pass with an electromotive force of one volt through a circuit whose resistance is equal to one ohm.

Ammeter—An instrument used for measuring the strength of an electrical current in amperes.

Amperage—The number of amperes passing in a given circuit.

Ampere Hour—A unit of electrical quantity equal to one ampere flowing in a circuit for one hour.

Armature—That part of a dynamo which generates the current, by being rapidly revolved on a shaft. It consists of a number of perforated discs placed closely together to form a cylinder, in which the wire coils are wound.

Battery, Storage—A number of separate storage cells connected so as to form a single electric force.

Brushes—Plates of carbon that bear on the commutator cylinder of the armature of a dynamo. Their functions are to collect and distribute the current generated by the armature.

Buckling—Irregularities in the shape of the surface of the lead plates of storage batteries, following a too rapid discharge.

Circuit—The path in which electricity circulates or passes from a given point through the wires.

Coil, Armature—The wires, strips, or bars that are wound around the armature cylinder or core.

Commutator—That part of a dynamo which is designed to cause the currents produced in the armature to flow in one direction in the circuit. It consists of a number of copper segments formed into a cylinder with mica strips between each segment.

Cut-out Automatic—A device used on a switchboard which automatically breaks the circuit when the dynamo stops generating and prevents the current from the battery from flowing back into the windings of the dynamo.

Electromotive Force.—The force which starts electricity in motion. The unit of electromotive force is called the volt.

Generator—The dynamo. An apparatus in which electricity is produced by the mechanical movement of conductors through a magnetic field so as to cut the lines of force.

Kilowatt—One thousand watts.

Kilowatt Hour—A unit of electrical power equal to a kilowatt maintained for one hour.

Lamp Hour—Such a service of electrical current as will maintain one electric lamp during one hour.

Ohm—The unit of electrical resistance. Such a resistance as would limit the flow of electricity under an electromotive force of one volt to a current of one ampere.

Plate, positive—That plate of a storage battery which is converted into or covered by a layer of lead peroxide by the action of the electric current when charging.

Plate, negative—The plate of a storage battery which is converted into or covered by a layer of sponge lead by the action of the current when being charged.

Switchboard—A board provided with a switch or a number of them, by means of which the electrical current can be controlled or diverted to the various circuits.

Volt—The practical unit of electromotive force. Such a force as would cause a current of one ampere to flow against the resistance of one ohm.

Voltmeter—An instrument used to measure the pressure of the electrical current in volts.

Watt—The unit of electrical power. The volt-ampere.

Watt-Hour—A unit of electrical work. The term employed to indicate the expenditure of one watt for one hour.

LIGHTING AND PUMPING STATION COMPARED.

Keeping in mind that the object of this article is to set forth in a purely untechnical manner the various points connected with electric lighting systems for the farm, the easiest and most simple way to explain briefly the general principles on which the theory of electrical energy is based, is to assume that a low voltage lighting system operates exactly in the same manner as a complete pumping station such as is used to furnish water to large communities. A pumping station, which consists of an engine, pump, controls and water mains, has the same relative equipment as a complete lighting plant, with its gasoline engine, dynamo, switchboard and wires.

Electricity flows through the wires in much the same way that the water flows through the mains. The electrical current, which flows thus, is measured in units called amperes. The dynamo generates these amperes which are forced through the wires by an electromotive force designated as volts. This current, however, in passing through the circuit meets with a certain amount of resistance, and this resistance is called an ohm. The theory, therefore, is that in conducting electricity through a wire of a certain size it requires one volt of electromotive force to pass one ampere of current through one ohm of resistance, on exactly the same theory that it requires a certain amount of pressure to force a certain volume of water through a pipe to a distance of, say one hundred feet. The greater the distance it is desired to carry the water the more pressure will be required to send it there.

FUNCTIONS OF DYNAMO AND SWITCHBOARD.

The functions of the dynamo and switchboard are more or less generally known. The dynamo has become standardized to such an extent that everyone is familiar with its shape and method of operation, but there are several ways of connecting up a dynamo to an engine which may be of interest to explain.

The most common and efficient method of driving a dynamo is by means of a belt and pulley, or a silent chain driven device, which can be detached instantly, and the engine used for other purposes when it is not necessary to run the dynamo. In some cases, however, it is practical to operate the generator by means of a friction pulley, placed against the flywheel of the engine. This is true, however, only with a dynamo capable of generating sufficient current for about fifteen or twenty lights.

There is also a method of connecting the dynamo directly on the shaft of the engine, and several lighting sets of this type are on the market. This type, however, usually requires a special engine which can be connected in this way, and unless it is possible to detach the dynamo from the engine when it is not required for charging the storage batteries, it is necessary to operate the dynamo continuously, and the engine is compelled to carry the load while doing other work. As most of the gasoline engines now in use on farms cannot be utilized for direct-connected generating sets, it is believed that the most simple and reliable method is by means of either the belt and pulley, or the silent chain drive.

SWITCHBOARD EQUIPMENT.

The switchboard is the medium through which the current from the dynamo to the battery and from the battery to the lights, is controlled and diverted to its various uses. This board usually consists

of a slab of marbleized slate, the size depending on the number of switches required to operate the system. The better grade of boards are also equipped with a voltmeter and an ammeter, and on some boards with a combination of the two. These meters are most essential, and their functions are to measure the pressure and amount of current being generated by the dynamo when it is charging the batteries, or when the current is being taken from the batteries after the dynamo has stopped generating. The voltmeter indicates the pressure or voltage, and the ammeter the amount of current passing in the circuit, either into the battery from the dynamo, or from the battery to the lights.

The latest type of switchboard is now equipped with an instrument called an automatic cut-out or circuit breaker. This instrument is what is known as an underload breaker, and its only function is to break the circuit from the dynamo to the batteries when for any reason the dynamo has stopped running or is not running properly. This is necessary for the reason that when the dynamo has stopped the current from the batteries would flow back into the generator, and not only use up the current already generated, but would sèriously affect the life of the dynamo.

Organizing a Co-operative Association

How One American Group of Farmers Organized to Take Care of Their Fruit

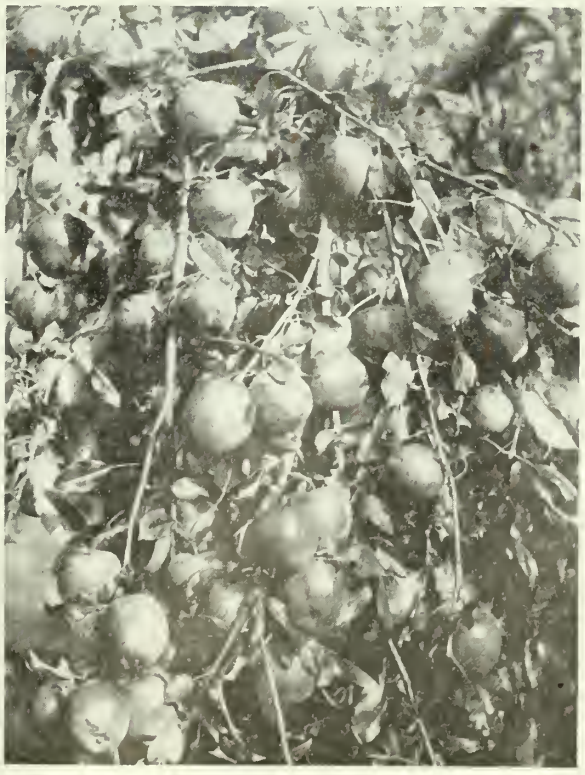
From the Fruit Grower and Farmer.

THE question which confronts the growers who are interested is "just how to organize a fruit growers' association." The following suggestions concerning the most important steps to be taken may prove beneficial to growers in a community or section where the organization of such an association is contemplated.

A fruit grower who is somewhat familiar with conditions in his section calls a meeting, the purpose of which is to consider plans for the organization of a fruit growers' association. A notice of this meeting is placed in the leading papers. The man who is calling the meeting also writes a personal invitation to twenty or thirty of his neighbor growers, inviting the mto attend this meeting. The meeting should be called at a central point where railway facilities are advantageous. When the growers have assembled, the meeting should be called to order and the election of a temporary chairman and secretary will be the first order of business. This gives the growers a chance to select whom they choose to direct the business of the meeting. The success of the association depends largely upon the individual growers who are to become members of the proposed association.

A committee should be appointed to make a canvas of the growers present, securing every man's name and the number of acres he owns or operates, together with the output from every orchard for the past season. This is done to get information essential before proceeding with the organization, and to determine the total acreage of orchards represented in the meeting and the probable quantity of fruit which the association would have to handle, provided the growers see fit to co-operate. While the committee is making this canvas the chairman should call upon each grower in regular order around the room for an explanation of his views in regard to the advisability of perfecting a co-operative association from among the growers present.

After the matter has been thoroughly discussed and each grower present has had an opportunity to explain his views, if the sentiment is in favor of co-operation, a motion would be in order for the chairman to appoint a committee to draft articles of incorporation and by-laws which will govern the association. The chairman should take plenty of time for the appointment of this committee. The committee should likewise take ample time to investigate rules governing similar organizations which may be used as a basis for the formation of their report.



Although apples have been cheap this year, it is no time to slacken the care and attention to the orchard. Apples have proven their capacity to make the owners money.

It is proper to have such organizations managed by a board of directors. The directors are elected by the members and the rules provide for recalling any director. When the committee is ready to report, the temporary secretary should notify, by letter, all of the growers present at the first meeting; also extend an invitation to other growers in that section who may not have been able to attend the first meteing. The constitution and by-laws should be read, section by section, amended and approved, so that every grower understands exactly the rules under which he will be working should he become a member of the association.

When the constitution and by-laws have been accepted, the next thing in order is the election of the board of directors, to whom the management of the association is intrusted. The election of the right board of directors is essential to the success of the association. Men who represent different localities within the section in which the association is to operate, should be chosen.

The next step is the directors' meeting. This should be held as soon as possible following the organization meeting. At the directors' meeting all of the officers except the general manager are elected from among the members of the board. This, of course, is usually a president, vice-president, secretary and treasurer. The most difficult problem to solve is the selection of a competent manager. Does the association want a man for this position who is merely a sales agent, or do they want a man who is fitted to help the growers in the problems of rating the fruit crop, and who is able to act as general inspector for the first season's packing?

An association handling principally apples should have a membership representing in the neighborhood of 2,000 acres of orchard, so that they could afford to employ the manager by the year. A large acreage is not so essential, providing the association deals principally with small fruits.

In fixing the commission for selling, the board should charge a percentage large enough to defray the expenses of the association.

GRADING RULES.

In establishing rules for grading the fruit, the board must study carefully the condition of the fruit which has been produced in that section in other years. The best grade of fruit the association is offering for sale is usually the pack upon which the association builds

its reputation. The qualifications for this grade must not be so rigid that only a small per cent. from the best orchards can be packed. The rules for grading the fruit should be so graduated that the grower may, as the years go on, by giving his orchard better care, be able to pack a higher per cent. of first-grade fruit. The man who this year is only able to pack out 10 or 20 per cent. of first-grade fruit, by giving his orchards better care, should be able to pack 60 per cent. first-grade fruit next season.

SELLING THE FRUIT.

Selling the fruit is a feature of the work of the association in which growers are all most interested. It is the selling end of the business which makes or breaks an association. The fact that the growers have seen fit to form a co-operative association carries with it a business prestige, and the buyer realizes he is dealing with a business organization instead of an uninformed individual.

The success of the association is dependent largely upon the quality and attractiveness of the package offered for sale. If the association is handling apples, the best grade must be standardized and worthy of the brand which identifies the grade, and the association must guarantee the pack. There is almost an endless field in styles of packages, methods of packing, branding, etc., so that an association needs only to exercise resourcefulness.

This matter of quality and attractiveness in the package is worthy of more attention than is given it by the average individaul grower. In the retail markets, and to a large extent in the wholesale markets, the appearance of the package has an appealing value. New, clean, white barrels; new, clean, white boxes attract the attention and actually whet the appetite by creating the impression that the contents of the package are every bit as good as the outside indicates, although the package may be tightly closed.

But while the package has an important bearing on the market value of the contents, the brand is worth even more. It is of vital importance that the association adopt a definite brand for at least its best grade of fruit, and this brand should be registered as a trade-mark. When this is done, the brand stands for something definite.

An association is not difficult to organize in any community where there is produce to market, and the growers of that produce are willing to work together in the packing and marketing of their crops. It is the most sensible method, and the remarkable part of it is that there are not more co-operative marketing associations in every farming community.

The 200 Egg Hen

An English Breeder Believes that this Production Should be the Goal of Every Poultryman

From the Countryside Magazine.

TOM BARRON of Lancashire, England, who 20 years ago was a humble shoemaker, is to-day one of the biggest and best known poultry men in the world.

"You see," said Barron, as he started his story, "I never liked shoemaking. It was my father's trade, and he expected it to be mine. I learned it because I had to, and later struck out for myself. My earnings were seldom more than five dollars a week. And then I met 'her' and we were married, and the five dollars looked smaller still. I said, 'Wife, let's raise poultry.' She took to the idea, and so we bought our first twenty birds. That was twenty years ago. That year we made one dollar net revenue from each hen. That set us thinking. We began breeding from our own hens, and at the end of the second year we had one hundred, and a dollar profit from each hen. Then we discarded the cross-breeds and began with pure-bred stock. At the end of five years we had four hundred head on our three-acre place. Then we leased a twenty-acre farm, transferred our stock to their new quarters, and continued to build up our laying strains. We increased the egg-production per hen very rapidly, and to-day, on twelve acres of land, we are raising seven thousand head of poultry, and most of the hens are laying two hundred eggs or more a year." The significance of this outcome of a twenty-year experiment in breeding egg-producing hens becomes at once apparent when it is realized that the average high-grade American hen is laying from ninety to one hundred eggs a year. Barron has succeeded in doubling the annual egg production of each hen, without any appreciable increase in the outlay involved.

"I early caught the idea of the importance of breeding in securing better egg-producing hens I got the trap-nesting idea, and began to search for the best layers through that method. I kept it up systematically, to develop a number of different strains. I now have ten different strains of laying stock of very high grade, and keep them up to the highest egg-laying standard by the same method."

MOTHER FOR PROFIT. FATHER FOR STAMINA.

It was not long before he realized the importance of the male bird in breeding for big egg-production. In selecting males, two things were proved conclusively: The mother of the cockerel must be a record egg-producer. In the second place, the male bird must be vigorous—he must be viciously vigorous. The best cockerels for breeding layers are the ones that fight without provocation. The meek ones never inherit the breeding-pen. Barron will tell you that it takes physical strength for a hen weighing but four pounds to produce a two-ounce egg a day for two hundred or two hundred and fifty days out of every year—and that sounds reasonable. And he will tell you further that the source of strength for this tremendous task lies in the fighting cockerel with which the mother of the hen is mated. The mother furnishes the "habit" and the father the "stamina." The combination produces double as many eggs in twelve months as the ordinary hit-or-miss method. Such fine physical power is an absolute essential, again, when an attempt is to be made to push egg-production to unusual limits. It takes superior endurance for a hen to lay eggs for two hundred and eighty-three days out of the year. The fighting cockerel again furnishes the power of endurance demanded. The breeder of laying hens is well on the road to exceptional success—according to Barron—when he is raising fighting cockerels from eggs laid by big egg-producing hens, and breeding these cockerels with hens from an entirely different strain of heavy egg-producers.

200-EGG HEN SOUGHT.

I am after the 200-egg-a-year hen. It isn't a question of getting a freak hen to lay a phenomenal number of eggs in twelve months—that means little to the egg-producer, and absolutely nothing to the egg-user. The practical question is: How can we raise hens by the thousand—yes, by the million—who will average two hundred eggs a year for the three years they are kept for laying purposes?"

As to varieties of fowl Mr. Barron breeds three exclusively:—White Leghorns, White Wyandottes, and Buff Rocks. It is my judgment that the White Leghorn can be bred to lay a larger number of eggs per year than any other variety. The White Wyandotte will come a close second as to the number of eggs produced, and often certain birds or selected pens will do better than the Leghorn. The Wyandotte hen will probably produce more in egg value than any other variety, because she lays more eggs at a time when eggs bring a higher market price. The Buff Rocks are a little behind the other two breeds in egg-laying power, but I have some splendid strains

FUTURE CATTLE PRICES.

James E. Poole, of the Livestock World, Chicago, knows the trend of the markets and just how the future is guided by the strange movements of the past month. Will cattle be high-priced in the spring? Will there be a shortage of cattle next summer?

Mr. Poole has in preparation a special article on this very thing for the Christmas number. He will touch also upon the big meat packer's plans to grab South American trade.

Be sure you get December Farmer's!

of this variety which are producing 230 and 240 eggs per year per hen.

FEEDING AND HOUSING.

Mr. Barron's observations regarding feeding, housing and other matters of general care indicate that in these, as in other particulars, he is not averse to ignoring general practice when he has proved to his own satisfaction that the results are better from the standpoint of that one standard which rules the Barron roost—egg-production. He gives scratch feed in the morning, throwing out a carefully determined amount on the floor of the house, which is covered with some six inches of litter, so that the birds will have to work for what they get, and thus keep themselves up to the fighting edge with which carefully directed inheritance has endowed them. A second portion of scratch feed is given at noon when it is needed. This scratch feed is made up of a mixture of grains, as many different varieties being used as possible. The evening meal is a mash served wet. Plenty of pure water and access to good-sized and heavily sodded runs during pleasant weather add to the general health and good condition of the birds, and help to keep the deaths from disease down to the low annual average of five per cent.

Ten Miles of Road in One Day

How South Bend, Indiana, and Niles, Michigan, Built a First Class Road With Volunteer Labor

From The Iowa Road-Maker.

REBUILDING ten miles of country road and converting it from a highway full of chuck holes into a level, graded speedway in one day is a feat not undertaken every day. When one city will close the doors of its business houses for the entire day and the mayor proclaim it "Good Roads Day" and the bankers, lawyers, doctors, merchants, mechanics, and laborers of another city work side by side with pick and shovel, results will surely follow.

More than 1,200 men in every walk of life, from the heads of some of the biggest corporations in the country to common laborers joined hands recently in making a ten-mile stretch of road between the cities of Niles, Michigan, and South Bend, Indiana, a level, graded, and graveled watershed road.

It was a pioneer day in road building. At 7.30 o'clock in the morning, Mayor Keller of the city of South Bend, Indiana, turned the first shovel full of dirt. It was the signal to begin the big task of building a road in a single day. The men who had offered their services went to work with a will. It was a glorious day, and the sun shone brightly and a south-west wind cooled the perspiring men and sweating teams of mules and horses.

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Light as a fairy's dream—
Mellow and mild and tasty—
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Helpful and restful and soothing—
I tell you they make a great team—
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Write to-day. A post card will do.

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The ten miles of road was divided into forty sections, a quarter-mile to the section. Each section was marked by a banner planted at the side of the road. First the scarifiers and graders came along and loosened the earth. Then the men with shovel and pick and the 200 teams of mules and horses came with their loads and an eight-inch covering of gravel was spread over the top and leveled. Five big rollers then went over the ground and soon made a veritable speedway out of the highway.

Between two small hills 120 loads of gravel were used. Not a stone was left unturned to make the day a success. Despite the hundreds of men, many teams, graders, and rollers, that were used in this gigantic effort there was little confusion. The 4,000 loads of gravel donated from two county gravel pits were spread evenly over the road and clerks, office men, and heads of business concerns worked earnestly, justifying their costumes of overalls and jumpers.

Fifty automobiles were used to convey the men to their sections. Farmers all along the road contributed men and teams.

At ten o'clock the mayor of South Bend went along the road in his big touring car carrying the city comptroller with hundreds of sandwiches and hard-boiled eggs for the workers.

An experiment that proved a great success was the use of twenty-seven prisoners from the county jail who, through the decision of the city judge, worked on the road.

The telephone company furnished free service by tapping in on their wires and dropping the wires down a telephone pole. This made it possible to keep in touch with every movement of the different sections and also business men could be informed of conditions in their stores and factories.

When the whistle blew for lunch at twelve o'clock eight autos loaded with baskets of lunch went along the line and each man was given a basket containing one ham and one roast beef sandwich, two hard boiled eggs, two onions, two pickles, two olives, one banana, six radishes, one drop cake, a piece of pie, and a napkin. Attached to the basket, which was neatly wrapped and tied, was a brand new tin cup. Following the lunch autos was an auto truck with milk cans filled with steaming hot coffee.

One business house furnished new substantial working gloves to every worker.

The students from the engineering class from the University of Notre Dame ran the levels.

At four o'clock the big Lincoln Highway pay cars in charge of M. L. Williams, Secretary of the Lincoln Highway Association of Saint Joseph county, with pay masters, drove the entire length of the road and paid off everybody who had worked with a souvenir Lincoln Highway check for one cent made payable to bearer. These bore the official highway emblem and the Lincoln Highway from New York to San Francisco along which ran the proverbial rail fence.

Nearly $500 in money was contributed by business concerns and private individuals to be used to put on the finishing touches to the road.

The biggest gang of workers on the entire stretch of 10 miles was 54 bankers, lawyers, doctors, dentists, city officials and merchants who formed a White Wing brigade. With big straw hats and dressed in white overalls and jumpers they wielded pick and shovel on their quarter mile along the State line between Indiana and Michigan with all the enthusiasm of youngsters on an outing.

When the whistle blew at six o'clock and the automobiles began picking up the 1,200 men, they piled in, shouting, laughing and joking. Twelve hours of hardest kind of labor had not dampened their ardor. Though they received but one cent in payment for their services they were more than satisfied. They had accomplished what they had set out to do and they were smiling and happy. Their effort had erected a mile-stone on the way to better roads.

Screenings at Fort William

From The Agricultural Gazette.

FROM statistics supplied by the Board of Grain Commissioners' Office at Fort William, it is learned that the quantity of screens taken from grain and shipped away from the terminal elevators at the head of the lakes will exceed 60,000 tons for the year ending August 31, 1914. Over 80 per cent. of this material goes to the United States during the period of open navigation.

Practically all grain is received at the terminal elevators uncleaned, that is, just as it comes from the threshing machine. Few of the interior elevators have cleaning machinery and even where such facilities are available, the cleaning of grain hauled direct from the machine is impossible during the rush season owing to the necessity of changing sieves for each different kind and lot of grain received. Where wheat, oats, barley and flax are being hauled to an elevator at the same time by several different farmers it is quite impracticable to change the sieves in the cleaner for each load.

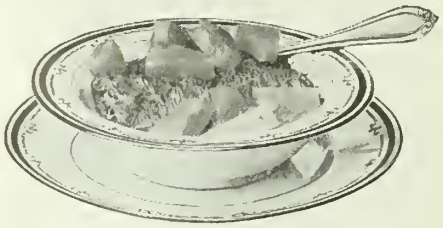
Farmers who can store their grain until after the busy season, can usually arrange to have a cleaner fitted up specially for their grain and then haul all they have and clean and load it before it is necessary to change or rearrange the sieves. As stated above, at the present time most of the grain is shipped to the terminal elevator for cleaning. Indeed few interior elevators except those operated by farmers' co-operative organizations possess cleaning machinery.

That threshing machines as at present constructed or operated can not clean grain satisfactorily is shown by the fact that nearly every carload received at the terminals must be cleaned. If the grain could be satisfactorily cleaned by the thresher it would effect an enormous saving to the growers of the West.

"Sixty thousand tons of screenings is equal in weight to 2,000,000 bushels of wheat, the freight on which amounts to

In Peace and in War

—in Sickness and in Health — in Good Times and Bad Times —in all climes and in all seasons — for children and grown-ups — the food that builds strong and sturdy bodies, fit for the day's work or the day's play, is



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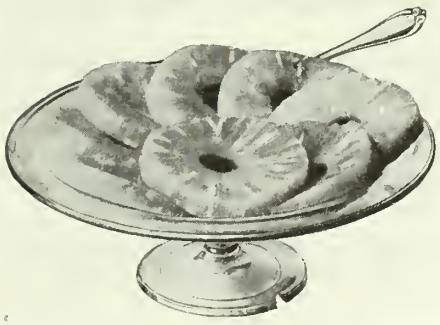
the one staple, universal breakfast cereal that sells at the same price throughout the civilized world. War always furnishes an excuse for increasing the cost of living, but no dealer can raise the price of Shredded Wheat. It is always the same in price and quality—contains more real nutriment, pound for pound, than meat or eggs and costs much less—is ready-cooked and ready-to-serve.



Two Shredded Wheat Biscuits with milk or cream supply all the nutriment needed for a half day's work or play. Delicious for any meal in combination with sliced pineapples, sliced bananas, canned peaches, pears or any fruit.

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BUSINESS CHANCE.

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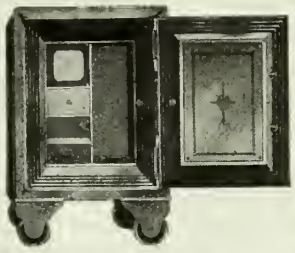
at least $200,000. In addition we must add the cost to the farmer of hauling and putting the material in the car either from a platform or through an elevator. Fifty thousand dollars is not too much for this item.

Under present methods of handling, even after paying this quarter of a million for getting these screenings to the lake front, the producer gets nothing for them for, although the owner may claim a part of the screenings in his wheat when the dockage reaches a fixed percentage (usually 5 per cent.) screenings are seldom, if ever, claimed. They become the property of the elevator and constitute one of its most profitable sources of revenue. Indeed the terminal elevator companies state that if this source of revenue were taken from them an increase in the charges for handling grain would have to be made. On the other hand, the producer believes the elevator company is deriving too much profit from the handling of his grain and could well afford to do without this additional profit. Analysis of composite samples of screenings shipped away from the terminal elevators show that from 50 to 75 per cent. of it is of unquestioned feeding value, consisting of oats, wheat, barley, flax, wild oats and wild buckwheat. The balance, made up of Lamb's Quarter, the various mustards and other weed seeds may be separated from the larger and more valuable portion by a 1¼-inch perforated zinc sieve.

On the average farm probably 60 per cent. of the screenings occurring in the grain produced could be used to advantage in feeding livestock, especially hogs and cattle, whereas the remaining smaller seeds are eagerly eaten by sheep and could be satisfactorily disposed of in such a way if care is taken in feeding to prevent as far as possible the return of vital seeds on to the land through their mixture with the manure. A little care in feeding the seeds and handling the manure should reduce this danger to a minimum. Even if the screenings were not used for feeding but were burned on the farm, it would pay the producer to do this rather than be put to the expense of handling and freighting them.

It is believed that a cleaner of simple design and of comparatively small cost of construction and operation could and should be used on every threshing machine to remove the screenings which, otherwise, are not removed until the grain is taken into the terminal elevator. Such a cleaner could be placed on top of the machine and the grain passed through it after being weighed and elevated. The thresher man is entitled to payment for every bushel he threshes whether it is grain or weed seeds, and by the above arrangement he would get credit for every pound of material threshed. Cleaning the grain in this way would, of course, increase the cost of threshing, but even then an enormous benefit would result to the farmer, not only by a great reduction in the expense of handling and transportation, but also through its value as a feed for livestock on his own farm.



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Cheapen Production of Hogs

From The Swineherd.

IT is to the interest of every breeder and hog feeder to produce his hogs at the limit of cheapness if possible. If you have secured hogs of good breeding, with lots of size combined with quality, you are in a position then to grow and develop your hogs. In other words you have the machine that will take care of the feed, for after this the cost is principally in the feed.

The breeder, in his anxiety to produce the greatest development, in both weight and size, does not take the feed cost into consideration to the same extent that the feeder does who is producing hogs for the pork market. The breeder sells his hogs at a price above the pork producer that warrants him in using more costly feed.

The producer has varied experience; there are some who are so located that they can secure the feed at much less prices than others. There are those who are connected with institutions that turn out a by-product that can be used to good advantage either as the entire feed or in part.

But the general feeder on the farm, finds that he is compelled to put his dependence for cheapening his feed on forage plants, such as the various legumes and other succulent grasses, which he must provide for the different seasons. These are varied in accordance with the different localities as that which is best adapted to certain districts is the cheapest in that territory.

The forage plant is not a complete building feed, it is a maintainer, a filler and a balancer of a grain feed, the combination of which is far superior to either separate.

Grasses are not only a balancer, but they are a conditioner as well, thereby serving two essential purposes. An exclusive grain feed unless it is made into a swill of some character, either with water or milk, is devoid of the necessary juices for stimulating best condition. These are well supplied by the succulent grasses. Nearly all kinds of grasses are good, though some are much better than others. A hard or wiry grass is less nutritious than a succulent one.

Parties who make a specialty of carefully counting the cost of their feed, have reported frequently very large results per acreage, from different classes of succulent forage plants. It is a well proven fact that cannot be disputed that one of the great cheapening processes in the feed question of pork producing is the combination of succulent grasses of some character in addition to the grain feed.

One of our established feeders who has made a business of pork producing, selling in some months as high as $7,000 worth of hogs, stated that he had made experiments with feeds as to gains made, taking cost of same and condition of the hogs, resulting from different character of feeds. This party carried 1,000 head or more at a time on the farm and made two

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The

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big general shipments each year. In one September he reported that the gain on an average of 300 head that he was feeding was 1¼ lbs. per day. The 300 head increasing 375 lbs. for a day's gain. They were fed at this time $7.50 worth of swill, $1.50 worth of whole oats, with $3.60 worth of ear corn and all the grass that they would eat in addition to the above feed. He makes special mention of the value of grass in making gain, in preserving the health and balancing the ration as well as cheapening it.

These pigs cost for their feed $3.50 per cwt. The grass that the hogs pastured was clover and timothy. They got all the grass they wanted from early spring off of 30 acres; 750 hogs were pasturing on it all this time. He states that there is no doubt that grass is the lever that lifts many a mortgage from the farm, and the man who tries to raise hogs without grass will find it an up-hill business, and that he is missing a great opportunity to cheapen the price of the production of pork.

Chemicals for Cleaning

Continued from Page 36.

and boil with a quart of water. Put a granite funnel into the plug hole of the sink and pour down the boiling solution, plug the sink and see that no water goes down for half an hour after, in order to give the soda a good chance to work. Then fill the sink with water remove the plug and let the rush of water finish cleaning out the trap. If the trap becomes clogged it is a simple matter to unscrew the cap at the bottom of the S-trap, and clear out the rubbish with a trap brush.

Burned or stained graniteware is easily cleaned by boiling in a strong solution of washing soda. A mixture of two ounces powdered alum and one quart vinegar, boiled together and applied hot will clean very dirty zinc or nickel. Rusty flat irons should be warmed enough to melt wax or mutton tallow, rubbed with this, and then scoured with coarse salt. If very rusty, kerosene could be applied and allowed to stand for an hour before treatment. Borax used in the water for washing dirty woodwork makes the work a great deal easier. As soon as a strip of the woodwork is washed, it should be wiped with a dry cloth to prevent streaking.

It is not economy to spend an hour or two polishing windows when a paste of whiting and ammonia would give the same result with less than half the work. Cleaning compounds may seem expensive but you can not really know that until you have tried them out and found how much work they will save you, and whether they will accomplish all the manufacturers claim for them without injuring your goods.

Note.—This will be followed by an article on Dry Cleaning At Home, in a succeeding issue.

Appetizing Things for School Lunches

By JEAN MacKENZIE

The matter of preparing wholesome and satisfying school lunches for country children is of no little importance. The rural school should have the healthiest and happiest of the nation's children, but we find puny, delicate individuals in every section, a state of affairs not entirely due to poor feeding of course, but in many cases this is one of the evils. To take care of this, and then get interested in promoting more cheerful and healthful lighting, heating and sanitary conditions would be a worthy enterprise for the country mother.

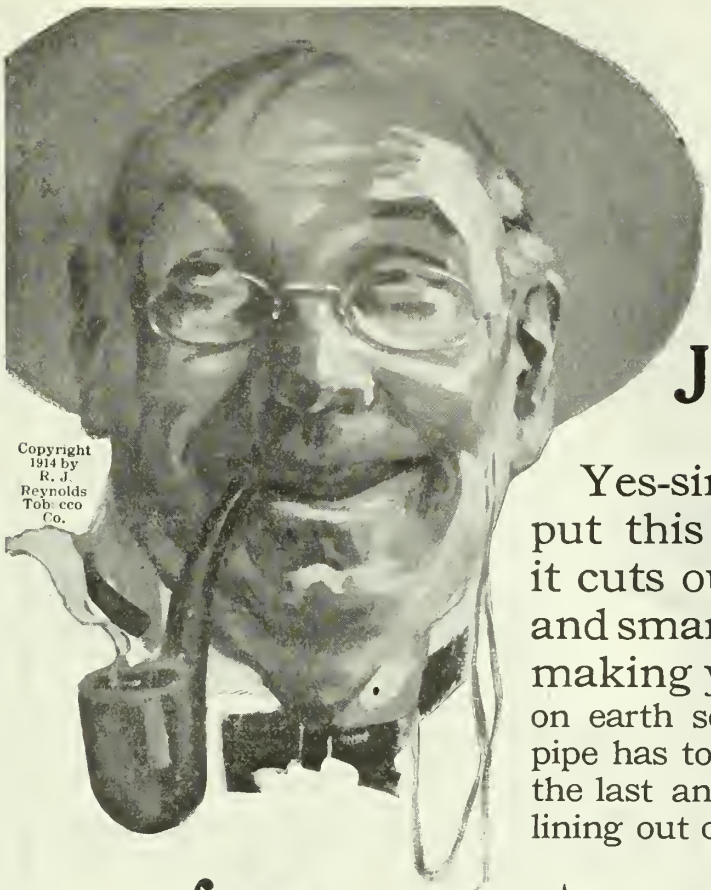
NOW that another school year is in full swing, the filling of the daily lunch basket is with us again, the bete noir of the average housekeeper. Is it not surprising how quickly one runs short of ideas for tasty things, when there are three or four children to pack school lunches for, five days a week? A cold meal, day after day is apt to pall upon the most vigorous appetite, and providing variety and toothsomeness is no easy matter.

There are very convenient lunch-boxes on the market nowadays, which tend to simplify matters not a little, fitted with knife, fork, spoon and tumbler, and a glass jar with screw cover in which fruit may be sent. Individual ramekin dishes, without handles, are excellent in which to send little cup-custards, and milk puddings, if they are liked, and there is usually a vacant corner in the basket in which to tuck a tiny bottle, holding cream for the latter. For wrapping up the lunches, paper napkins serve just as well as the linen ones, and require no laundering.

Sandwiches for a cold lunch should be made of something not too dry, and with a piquant and appetizing flavor. Sweet sandwiches are nice once in a while, but a savory filling is relished more, as a general rule. In season, lettuce, cucumbers, and ripe tomatoes, with a little dressing are very good, and carry well, while in winter fish and meats make satisfying fillings. For tasty sandwich fillings, home-made potted meat, chopped hard-boiled eggs moistened with salad-dressing and seasoned to taste, sardines wet with lemon-juice, and cream cheese are all delicious. Fig paste makes a very nice sweet sandwich, and another good one is made of brown bread, well buttered, and spread with juicy eating raisins chopped with a few walnuts and moistened with cream. Soft, sticky layer-cakes, cuts of juicy pies, or crumbly cookies, do not stand transportation well, and always look messy when unpacked. For sweets, send plain cakes, such as sponge, spice, or plain fruit cake, little individual pasties or tarts, and sugar cookies or ginger-snaps; while nuts, raisins, figs and dates are a much appreciated "finish." Fresh fruits in season should be used freely.

STUFFED EGGS.

Boil eggs twenty minutes, remove from hot water and put instantly into cold, and



P. A. takes the Razoo out of the Jimmy Pipe

Yes-siree-bob, you can put this down for P. A.: it cuts out all that singe and smart that have been making you wonder why on earth so good a friend as a pipe has to turn around toward the last and bite the everlasting lining out of your taster.

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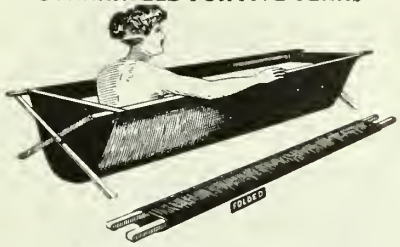

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shell at once. Half mash yolks while hot with plentiful seasoning of butter, pepper, salt, a little onion juice, and cucumber pickle finely minced. Work the seasoning well through, then shape into balls yolk-size, put each between two half-whites, and fasten with a couple of toothpicks. Wrap each egg as finished in wax paper.

NUT WAFERS.

Mix five level tablespoons of sifted flour with a pinch of baking powder and a quarter of a teaspoon of salt, and sift again. Add one cup light brown sugar, one cup English walnut meats broken in bits, but not chopped, and two eggs beaten together. Spread thin over well buttered tins and bake in a moderate oven till pale brown. When perfectly cold cut in strips, and then remove these from the pans.

WELSH CHEESE CAKES.

Fill tart shells with rich pastry and place a spoonful of raspberry jam in the bottom of each. Mix the following batter and spread over the top of the jam.

1 egg,
4 tablespoons butter,
4 tablespoons sugar,
8 tablespoons flour,
½ teaspoon baking powder,
Grated orange rind.

Make above mixture into cake batter, and put a spoonful of cake mixture on the top of the jam and bake.

NUT SPICE CAKE.

Cream a coffee cup of well-washed butter, with two cups brown sugar and one cup black molasses. Add seven egg-yolks, beating hard after the addition of each one. When all are in, add two tablespoons clear strong coffee, one teaspoon each powdered cloves, allspice, ginger, mace and cinnamon, a grated nutmeg, a pinch of salt, slight dusting of paprika, and a salt-spoon of powdered black pepper. Beat all together hard for ten minutes, then add four scant cups flour, browned in the oven, but not burned. Sift it after browning, and add two teaspoons baking powder. Add one cup walnut meats broken, beat well and pour into deep, well-greased pan, lined with buttered paper, let rise for ten minutes with the oven door open, then bake in quick heat until done through.

ALMOND GINGER-BREAD.

1 cup molasses,
1 tablespoon butter,
1 tablespoon boiling water,
2½ cups flour,
1 teaspoon each ginger, cloves, cinnamon and soda,
½ saltspoon salt.

Put melted butter into bowl, and add the molasses and spices. Dissolve the soda in the hot water, add to mixture in bowl, then beat in flour. Pour into shallow tin lined with buttered paper, and just before putting in the oven, cover the top with blanched almonds split in halves. These will sink in half way, but not to the bottom, and the combination is very good indeed. Bake in a moderate oven for forty minutes.

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Many a young man never knows what pay-day he will find the "blue ticket" in his envelope. He is simply one of the crowd who are hired when times are good and fired when times are bad.

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6902—LADY'S APRON.

This is a real work apron. In front the material extends almost to the neck and covers the skirt as well. In the back the skirts are covered, but only straps are used at the top. These cross over and button at the shoulders. Large patch pockets complete the apron. Gingham, calico and cambric are the materials usually employed in making work aprons.

The pattern 6902 is cut in sizes 36, 40 and 44 inches bust measure. Medium size requires 3¼ yards of 36-inch material.

Price of pattern 10 *cents.*

6881—LADY'S DRESS.

Simple enough for home wear as well as for the street this frock has the upper ends of the small, long sleeves extended to the neck edge, forming a shoulder yoke. Front and back are attached to this without fullness. The three-gored skirt is attached to the blouse and is slightly full across the back. Collar and cuffs are of contrasting material.

The pattern 6881 is cut in sizes 34 to 44 inches bust measure. Medium size requires 4⅛ yards of 44-inch material with 1 yard of 36-inch contrasting goods to trim.

Price of pattern 15 *cents.*

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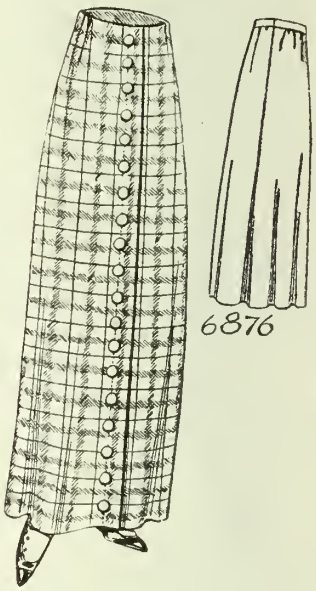
6878—LADY'S WAIST.

In this design we have a model for a plain shirtwaist. The open neck is trimmed with a collar of medium size and the closing is in front. The sleeves are plain and small and end at the wrist in a shirt cuff. For these waists such materials as handkerchief linen, heavy linen, silk, satin and the like are popular.

The pattern 6878 is cut in sizes 34 to 44 inches bust measure. Medium size requires 2⅛ yards of 36-inch material.

Price of pattern 15 *cents.*



6876—LADY'S SKIRT.

This plain and serviceable model is designed for a walking or suit skirt. It may have the waistline either raised or regulation and is gathered across the top in the back. The closing is in front. Such fabrics as serge, cheviot, corduroy and the like are appropriate. It may be worn with a coat of the same material as a coat suit if desired.

The pattern 6876 is cut in sizes 22 to 32 inches waist measure. Medium size requires 2¾ yards of material 36 inches wide.

Price of pattern 15 *cents.*

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6885—CHILD'S DRESS.

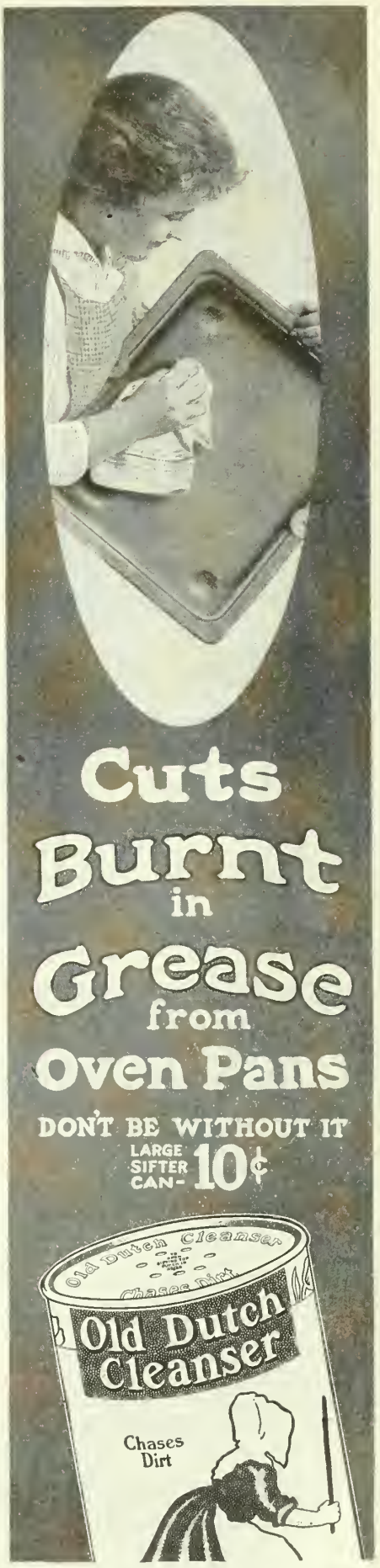
This plain little frock may be made of wash materials, even in winter, or of some pretty plaid or striped cheviot. Plain serge is also pretty and useful at all times. Sacque lines are used in cutting the dress; there is a tuck at each shoulder in front and back, plain sleeves, long or short and fancy collar. The closing is in front and a belt spans back and sides only.

This pattern can be obtained by sending 10 cents to the office of this paper.

6871—BOYS' DRESS.

This little dress shows a novel form of the usual boy's suit. It has a small opening near the neck in front, and is slipped on over the head. A small turnover collar trims the neck and the plain, small sleeves end in a cuff. There are also patch pockets. Under the blouse are worn trousers which are straight and open at the knee in the present fashion.

This pattern can be obtained by sending 10 cents to the office of this paper.



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WOMAN'S SOAP

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Tree Ramparts Against Famine

Continued from Page 18.

in that state by tree growth. In our own Western provinces millions of trees have been set out through efforts put forth by the Federal Government. In Northern Ontario a good work has been started by the setting apart of provincial reserves of natural forests from which timber is to be cut only as it matures, care being taken to preserve the young growth during the process of harvesting. What I am pleading for is the extension of like work to older Ontario to the end that land useless for agricultural purposes may be devoted to the proper work, that of growing timber in order that the creation of desert areas may be avoided, that climatic conditions may be improved, our water supplies conserved and a source of future revenue made certain.

This is to my mind one of the most useful, necessary and profitable undertakings awaiting the hand of some man in the Ontario Government. It is vastly more important than the work of building improved highways that will be largely monopolized by joy-riding motorists. It is one promising immediate benefits to the Ontario of our day. It is one that will call down blessings from those who will be the Ontario of to-morrow. Where is the man who will make a start in the reforesting of old Ontario his life work?

The Man From Glengarry

Continued from Page 20.

Of course it is the Celtic strain in his blood that produces this effect. Put him back a few centuries, dress him in kilts, roughen up his hair and beard and he would be the wild highlander all over again. In these days of conventionality and self-suppression, most of these natural traits are toned down, but even so, there is enough of the enthusiast about the man to differentiate him from the ordinary run of human beings and make him, what is generally called a "character."

From the outstanding facts in his career, it may be deduced that he is somewhat of an agitator. He must be forever pushing some reform or advocating some change or else he will be unhappy. He is at his best at some farmers' meeting. If on the platform he will orate vigorously until he has his audience on their feet with enthusiasm. If discussing some burning question with a group of listeners at one side, he will tilt his hat to the back of his head and talk the thing to a finish with the utmost vim.

Yet with all his outspokenness, there is nothing of the unbalanced crank about him. Enthusiastic he may be and it often appears as if he were being swept away by his feelings, but those who know him best are fully aware that no one is

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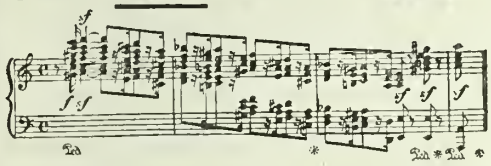

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shrewder or more careful than he. He is a born diplomatist, a clever strategist, who always knows what he is about.

In appearance, Lockie Wilson is a man of good height and of spare but sturdy build. He wears his fifty-eight years easily and only shows the hand of time in a slight grizzling of the beard. The latter is a distinguishing feature. It is worn fairly full but always carefully trimmed. He has a good shock of hair and heavy eyebrows. The eyes are naturally small but they expand as he warms up in conversation or on the platform and sparkle with animation. Altogether he is of the dynamic type of personality, both in appearance and in action.

The Right Corn to Save for Seed

Continued from Page 31.

ing, but I find the box tester, using sawdust, is entirely successful. I made my box from pine, twenty by forty inches and six inches deep. I boil the sawdust for fifteen minutes, just before using, this is to kill moulds. Then, I put three inches of moist sawdust in the bottom of the box, over this I stretch a muslin cloth on which I have marked squares, with an indelible pencil, while the cloth was damp. I use ten squares across the cloth and twenty squares down and I number each row of ten. Next, the cobs to be tested are grouped in rows of ten and each group of cobs is numbered, and the grains from the first ear in group one, starting from the right-hand side go into the first square on the right-hand side of row one and the grains from the second ear go into the second square and so on until row one and group one of ears is completed. Six grains are taken from each ear—two from the tip—two from the center, and two from the butt. When the grains are all in their places in the tester, a damp cloth is carefully placed over them, and over this cloth is placed a sack, with about two inches depth of moist sawdust in it, and loose enough, so that it can be pressed down evenly over all the grains.

The tester is left in the kitchen, where it is not in the way, and where there is the required heat. It takes about six days for the test, and the only attention the tester requires, is to have the top pad moistened again about the third day. On the sixth day, I carefully remove the top pad, and the cloth and examine each group minutely, to note if any grains have failed to germinate and, if they did germinate to see that both the root and the top of the tiny plant are vigorous and healthy. The cobs whose grains show a strong, vigorous, perfect germination are saved. All others are discarded. So here we have the test, and when we come to look into the matter, and consider that fifteen average ears of corn planted four grains to a hill and three and a half feet apart between the rows, will plant one acre, we can see the importance of this test. Before one can occupy a profes-

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1 cup Brown Sugar
1 cup White Sugar
1 cup Milk. Piece of Butter, size of Walnut, half cake of Chocolate, pinch of Salt.
Boil over low fire. When done stir in half cup chopped walnut meats. Add half teaspoonful vanilla, stir until creamy and pour into "Wear-Ever" biscuit pans.

Make this Fudge in a

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"Wear-Ever" utensils get hot more quickly and stay hot longer than other ware. Use them and save money, time and labor.

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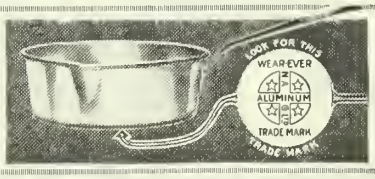

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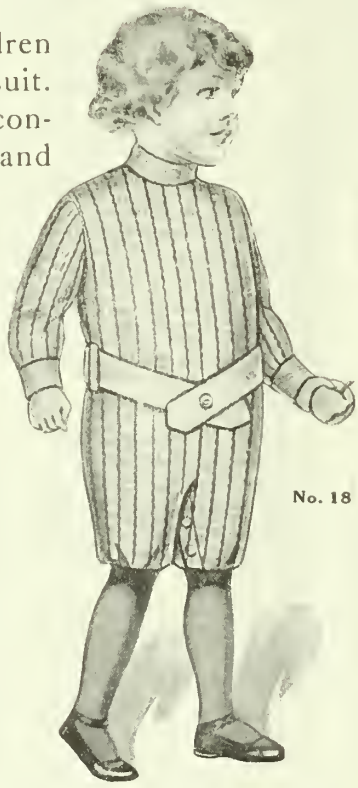

No. 18

Monarch Knitting Co., Limited

Head Office—DUNNVILLE, ONTARIO, CANADA

Factories at—Dunnville, Ont.; St. Catharines, Ont.; St. Thomas, Ont.; Buffalo, N.Y.

sional position, they must pass many examinations, simply to eliminate the unfit one—this is business. Now, is it not a good thing for the farmer to put his seed corn through this examination before he allows it to work for him during a whole season? This is a safeguard that also eliminates the unfit.

"Now come on out, and I will show you where I put my nubbins," said Mr. Wilson. So I went, expecting to see a corn crib, or a bin—but no. The recipient of those nubbins was not a box, nor a bin, but a herd of lowing cattle. "I just bought those thirty-five head up in Bruce county last week, and I can get a good price for my nubbins, by turning them into beef," he explained. On the way back we passed by two of his large fields of corn, both underdrained, both green and vigorous looking, and as we stood there looking over those fields of nodding plumes, and rustling green leaves, and waving silk—all so in line, they called up to one's mind the picture of those vast armies of men marching against each other over on the Continent. Then came the thought, how insignificant the corn is, and then the true answer, without corn the men could not march, nor live. "I have heard that there is corn in Egypt: get you down thither and buy for us . . . that we may live and not die." So we see it all comes back to the soil.

We examined the corn crib next: It was a double crib with a passage way between, and on a cement foundation. This type of crib, gives splendid ventilation for the corn, and the cement foundation protects the stored crop from the inroads of mice and rats, as well as raising it up high and dry. We are glad to see that the day of the old "Peter Tumbledown" type of crib with its leaky roof and damp wooden floor raised only a few inches from the ground is passing away, and after the grain has been raised it is going to be cared for, and cared for properly, so that deterioration while in storage shall be as small as possible.

"The trouble with the seed-corn outlook said Mr. Wilson, "is that there is too much competition now, and too much poor seed sold. Why, the elevator man shovels any quality of corn right from his bins, and sells it for seed, and the buyer wonders why his ensilage crop is practically a failure that year. But there is a time coming when the buyer will be educated to demand real seed corn of the best quality, and he will know just what kind suits his conditions the best. He will stick to that one kind and the result will be better ensilage and more of it.

If the Eastern grower knew a reliable dealer in seed corn and if he would buy corn on the ear in the fall and have it shipped to him then, peg-dry, test, and shell it himself, he would get a number one corn at a much reduced price. It has been tried out and this method works very satisfactorily. And when the Eastern ensilage grower recognizes the fact that he can procure number one seed corn right here in Ontario and corn that is acclimatized, and that will mature from a week to twelve days sooner than corn imported from the United States, he will patronize home industry to the mutual benefit of all.

Twisting Trails

Continued from Page 23.

Suspiciously the woodsman turned toward her.

"Drop those things," she commanded. "I won't make a noise if you throw them away."

He hesitated and then put the handkerchief in a pocket.

"See that you don't," he grumbled and turned again into the brush.

In ten minutes they came to a little stream. From a clump of spruce the man drew a canoe and launched it. Pointing to the bow with a paddle, he motioned to his captive to step in. She sat down with her back against the thwart, and the woodsman pushed out into the middle and paddled down stream.

For a time Miss Straine studied the man closely. He found little opportunity to look at her, as the narrow, twisting creek kept him occupied with his paddle. At last they turned a bend and emerged into what appeared to be a bay in a lake. The man paddled across this to a sand beach, where he landed.

"We'll have a bite to eat here and then go on after dark," he announced, as he stepped into the water and drew up the craft.

From a pack in the canoe he took a kettle, frying pan and a small axe, and began the preparation of the meal. Miss Straine sat on a boulder and watched him. She tried to make him talk, but the exercise and the excitement of his work had eliminated the effects of the whisky and he became sullen and wordless.

Only when she mentioned the name Fowler did he appear to hear and then he merely looked up suspiciously.

After dusk they again got into the canoe, and the man paddled out into a large lake. For two hours they traveled steadily. Far from shore, with nothing to relieve the monotony of the endless dark wall about them, the girl finally dozed.

The barking of dogs wakened her and she looked up to see dim trees beside her and then a strip of sand beach. There was a sharp command from the shore and the dogs scampered back into the brush. The man beached the canoe and Rea Straine stepped stiffly to the shore.

Silently he led the way up a trail toward a little grove of pines. Behind them she saw the dark shadow of a cabin and the next moment a light shone from the window. The man pushed open the door and the girl entered.

At a table in the center of the room an Indian woman was bending over a smoking lamp. The squaw looked up, surprise in her eyes. And, as Rea watched her, the surprise gave way to suspicion and then quicker hatred. Instinctively the girl felt that in this first woman of another race, with whom she had come in contact, she had made an enemy.

"You'll bunk here," the woodsman said, leading the way to a low door through which Rea saw a small room and a

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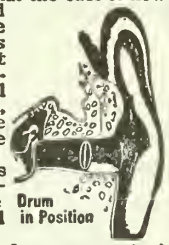

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blanket-covered bunk. He gave her a lighted candle, and, feeling that she was dismissed she entered and closed the door.

Then, for the first time, she heard the Indian woman speak. Her words, in the Ojibway language, were low. The man made several short, gruff replies. These evidently angered the squaw, for her tones were raised to a higher pitch. At last the woodsman lost his temper.

"You're crazy," he shouted in English. "I'm not going to have her or any other white woman. Shut up and go to bed."

Immediately the dogs began barking again, and Rea heard the woodsman snap a lock on her door and then hurry out and down the trail toward the lake. She heard him swearing at the dogs and beating them back. Then came the sound of paddle on gunwale and another voice in greeting.

Listening intently at the small window, she did not hear her own door open. As the light streamed into the room, she turned to see the squaw in the doorway.

"Come," said the squaw in English.

There was no attempt on the part of the red woman to conceal her hatred, and Rea hesitated.

"He my man," the squaw went on in a whisper. "Me his squaw. You go quick."

She stepped back and Rea walked into the main room of the cabin. The woman hurried to a rear door and opened it.

"Go quick," she commanded. "Little trail 'cross island. Canoe there. Marchon, be-me-to."

Rea realized the suffering of the squaw, her dread of the woman of her husband's race. Then, too, a desire to have one friend in a hostile situation made her turn to the woman.

"I didn't come to take your place," she began. "I have ——"

The light in the squaw's eyes stopped her. She saw menace, danger. Slowly she walked past and out of the door.

"You get hungry," said the squaw. "You eat this," and she handed the girl a small bundle. "Little trail there. Canoe across island. Go quick."

She shut the door, leaving Rea in the darkness. For a moment the girl remained where she was, making sure that she was not watched from the rear of the house. Then she turned toward the front of the building, dropping the bundle of food at the corner as she passed.

Making her way carefully toward some brush at the edge of the beach, she soon was within twenty feet of the place where she had landed. Through the willows she could dimly see two figures at the water's edge.

"Have any trouble?" she heard a voice say, evidently that of the newcomer.

"No. It was easy. Never made any fuss at all after I told her what I'd do if she did."

"I've heard she was a little fool and I was afraid she'd have to be knocked down and tied."

"I can handle them kind easy."

"See that you continue to handle her right, Milford. You keep her here. Keep her hidden. Better have the squaw make a pair of moccasins, so her shoes won't leave any traces around the cabin. And hide her somewhere on the island if someone comes along. But you needn't be afraid. No one will ever suspect her being here."

"All right, Mr. Fowler. "I'll do the rest as good as I done the first."

"And keep sober, Pete. Do you understand? You've been drinking as it is. Bungle this affair in any way and I'll have the provincial police up here in a hurry. I guess they'll be glad to have the proof in that Hanshaw killing."

"You needn't be afraid. I'll do it right," replied the woodsman, sulkily. "But this job evens us up. It's the last, and I'm to be sent west."

"I'll keep my word," promised the man called Fowler, as he passed off in the darkness. "And I'll be back Thursday night and tell you what to do with her."

Rea turned and hurried to the cabin, entering at the back door. Before the squaw could spring from her chair she had crossed the room, entered her own door and closed it. The woman rushed forward, but at that moment the woodsman came in.

Remarkably calm as the actions of the girl may have been when she met the man on the portage trail, there was no lessening in her courage when she found herself locked in the little room and listening to the shrill voice of the squaw and the occasional sharp replies of her captor. Theoretically, she should have flung herself on the rough couch, buried her head in her arms and abandoned herself to sobs and tears.

But Rea Straine didn't do any of those things. After she had listened for a moment and made sure that the conversation in next room was being conducted exclusively in Ojibway and that she could not understand a word of it, she sat down on the bunk and stared at the log wall opposite.

That is when the tears, hopeless, helpless tears, should have come. Rea Straine smiled. It was not a quick smile of amusement, but a slow, increasing smile of pleasure, of pleasure due to triumph. At last the smile gave way to a little giggle, and then she suddenly leaned forward and began to unlace her high bush shoes. In three minutes she was between the blankets, her face to the wall. In five minutes she was asleep.

CHAPTER III.

E. G. SUMNER was too busy, too worried, to be impressed with the incongruity of his surroundings as he took his seat in the Toronto office building. His desk was one of those huge table affairs, its broad top covered with all the modern office contrivances of the big, busy man. It fairly bristled with blue prints, blue-covered reports and baskets of correspondence.

Behind him was a smaller desk, with a roll top and innumerable drawers and pigeon holes. His chair was large, simple, stern, rigid, as befitted the work to be done between its solid oak arms.

There was a large fur rug on the floor, a sparkling water cooler in a corner, an-

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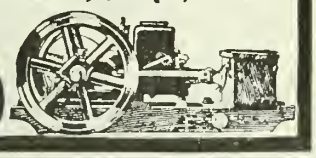

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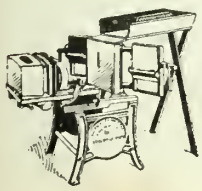

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other hard, competent chair across the wide desk.

Altogether, it was the efficient workshop of the successful man of big business, and yet, had Mr. Sumner's thoughts had time to turn to comparisons, he would have realized that his available resources would not have met the expense of furnishing another suite like the room he occupied and the two which lay between him and the outside corridor.

The mining man took his seat in much the same manner that a general, fighting in the last ditch, swings into the saddle on the morning of the final engagement. He did not have to sit idly or putter in this and that while he collected himself for the start. A sleepless night had done all that, and, once he was between the strong arms of the chair, he plunged immediately into his task.

First came the mail. On top of the neat pile arranged by his head stenographer was a telegram.

"Start in the morning. Helen different girl already. Didn't think the bush could cure everything. Cheer up. You'll hear from me in two or three days.

"LAWRENCE HEATLEY."

"That's a good beginning," exclaimed Mr. Sumner.

Rapidly he ran through the remaining letters and telegrams. Nothing was of comparative importance, and he called his stenographer. In ten minutes he had dictated the necessary answers.

"I'll be gone an hour," he said as he finished. "Call up the Howard Agency and ask them when I can have that report. Tell them they needn't make it if they can't get it here by eleven o'clock."

He took his hat and went out. As he shot down in the elevator he felt thankful for the telegram from Heatley. It gave him courage for what he had to do, for the final fight he was about to make in the banks. Faith in his ability had been shaken by a succession of disasters and heavy losses, his credit strained to the last possible bit of elasticity by his efforts to save himself through the one property that remained exclusively in his hands, the Whisky Jack mine; monotonous reports from its superintendent of failure to strike the vein that the owner felt certain was there, the refusal of every bank from which he had borrowed money to extend his notes—these were the factors that made this day critical in the affairs of E. G. Sumner.

The public, to be sure, still considered him a wealthy man. His friends believed him to be such. His daughter, accustomed to his idolatrous care, never gave his business a thought. But those who held his notes, who had stood by him in his last stand, knew his real financial condition, and, because they knew it as well as he did, were suddenly shutting off their support.

His own faith still continued, for he felt as certain of the presence of rich ore in his mine as he did of his own living and breathing. It couldn't help but be there, in view of the reports of men he could trust and of what he had seen himself. But a man's faith, unless backed by

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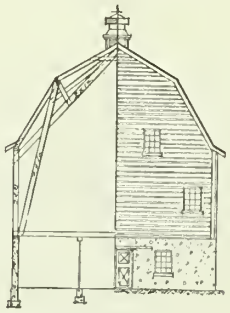

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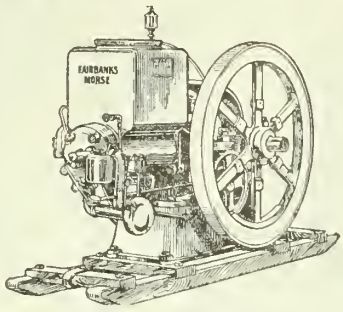

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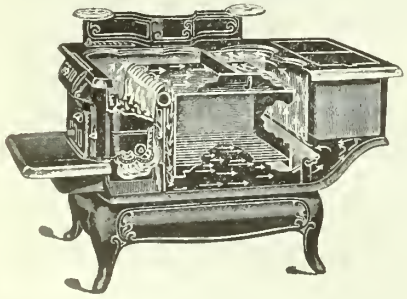

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The Supreme Heating Co., - Welland, Ont.

facts, is unavailing when the man is submerged to his ears in failure. Not another cent could he borrow to continue the work. The banks considered the mine, as it now stood, entirely insufficient security for the sums they had advanced—and Sumner had nothing else to pledge. His residence, long in his daughter's name, he never considered.

The mine owner was sufficiently farsighted to see the climax approaching several weeks before. He had waited impatiently for Heatley's return from the West, for on Heatley's word he knew he could raise sufficient money to clear himself.

Nor had he taken without question the reports of his superintendent. He was too cautious to permit his success to depend solely on the word or actions of one man, and he had started an investigation of his superintendent. The first reports were disquieting, but did not warrant action. Then nothing had come from the private detective agency, despite his prodding.

The round of the four banks that morning was unavailing. Less than a week remained and, unless he was bringing up ore by that time, nothing would be left. At each bank there had been a decided interest in Heatley's trip, but it had served no present purpose.

"If he says O.K., it's O.K. with us; if not, we'll have to save what we can," had been the common expression of opinion, and nothing Sumner could say or do would change that stand. Even his own faith wavered and he found himself arguing feebly and hopelessly.

As Mr. Sumner slipped again into his office chair, his stenographer entered.

"The Howard man is here, sir."

"Send him in."

The mining man would have considered his caller a preacher, or a gambler, never a detective. Tall, thin, with a somewhat vacant expression, plainly dressed in black, he walked slowly into the inner office and as slowly and unobtrusively took the chair opposite his client.

"Well," said Mr. Sumner, impatiently. Why had he ever employed a man like this in so important a matter?

"Mark Fowler," the other began, in a sharp, quick tone so unexpected from his manner and appearance that Mr. Sumner did not catch immediately the significance of the first of the quick stream of words that followed, "has been working every crooked mining game that has been worked from Cobalt to the Klondike and from Galena, Illinois, to Arizona. He is wanted in three states and in B.C. under four names. He first came up here when the Cobalt thing started and he kept straight, which gave him the reputation that got him his job with you.

"He's a good mining man, none better; but he can't play the game according to the rules. When he had shut himself out of the best districts in the West, he came here, settled down to the honest game until he was established and then framed something on you. What it is, I don't know. Maybe you do. I've told you enough."

"All I wanted to know," snapped Mr. Sumner. "Have you enough proof to cause his arrest?"

"Couldn't get that. He's not the kind that leave proofs around. There probably is some, but I can't get it. I've even smelled out a stunt or two he's pulled here outside the mining game, but there is no trail."

"What has been his usual method?"

"That's where he's strong. He has no usual method. Everything he does is something new. He wins through his unexpectedness. There is hardly a mining game that he didn't originate. You know them all. He's got nerve, too, and he doesn't stop at anything. There are a couple of mysterious disappearance cases I would like to have time to work on. Anything more you want me to do?"

"No. That's enough. I'll do the rest. Make out a written report, complete as you can, and get it over here so I may have it when I need it."

Unobtrusively the thin man wandered out of the office. He moved slowly, but, when Sumner looked up he was gone.

For a moment the mining man sat staring at the closed door. Then he reached quickly for the telephone. As he lifted the receiver the stenographer entered with a telegram. She laid it before him as he called the number. Indifferently he glanced down to read as he waited. The receiver was slammed back into its hook and the yellow sheet was grasped in both hands and read again.

"Helen has disappeared. Wandered from camp first night. Not seen since. Have searchers at work, but no trace. Think she is lost in woods. Can't be far and we'll have her to-night.

"HEATLEY."

Nerve and self-control that could resist the strain to which E. G. Sumner was subjected seldom exist. On top of the struggle of months to rebuild his fortunes, on top of the anxiety as to his future as a successful man, on top of his great distress in refusing to permit his daughter to marry young Forbes, came this. Immediately his imagination pictured the possibilities. Lost, starving, in the forest. Lying dead, cold, unreclaimable, in the deep waters of a northern lake. Hysterical, fear-tortured, running aimlessly through the tearing brush. Exhausted, hopeless, stumbling to a deathbed in the moss of a wilderness swamp!

For a moment Mr. Sumner was hardly sane.

" . . . Sorry, E. G., but we've got to protect ourselves. If there was a chance, we'd let you have the money, but——"

" . . . Helen's a different girl already."

" . . . Fowler has worked every crooked mining game from Cobalt to the Klondike. He wins through his unexpectedness."

His mind began to clear, to shake off the haze, the effects of the blow.

" . . . He wins through his unexpectedness."

Suddenly Mr. Sumner sat up in his chair.

" . . . his unexpetcedness."

"Fowler!" he cried in a low voice. "That's it. I know every move the man's

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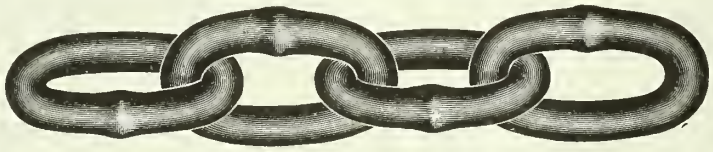

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Links per foot	16	14	13	12
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Breaking strength	4500 lbs.	5000 lbs.	7000 lbs.	9000 lbs.

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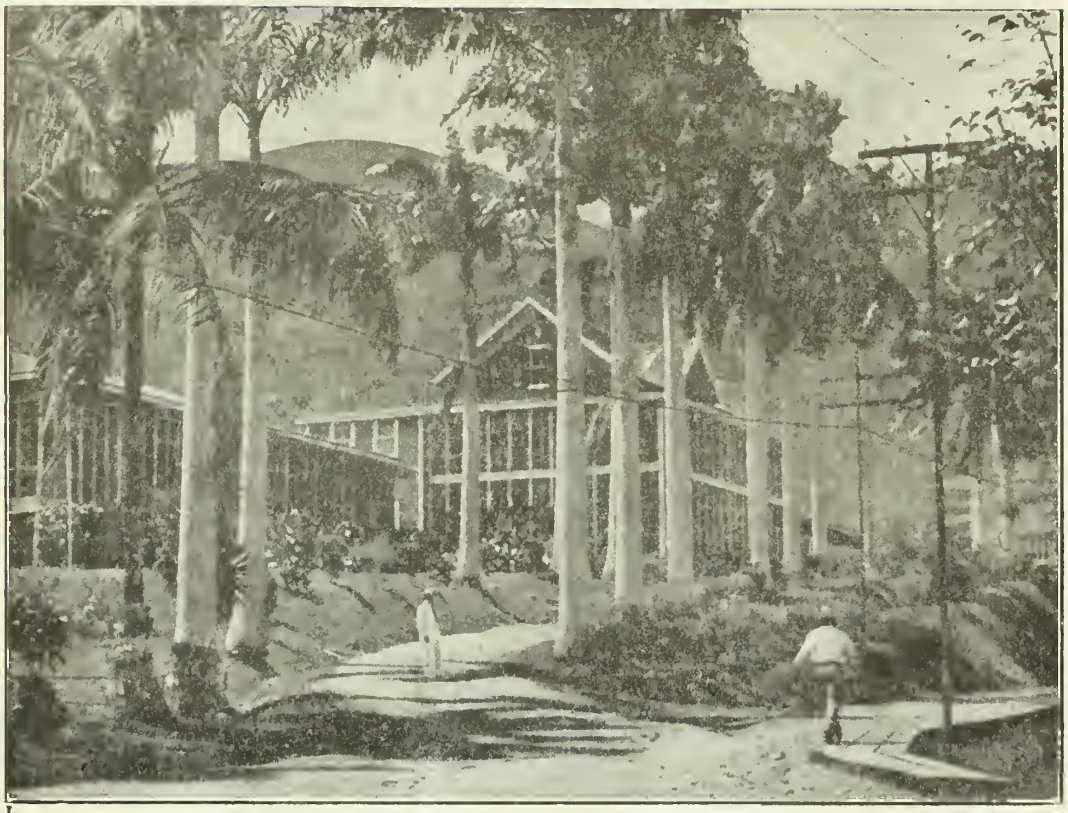

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The FARMER'S MAGAZINE

143-153 UNIVERSITY AVENUE, TORONTO, ONTARIO

made. He knows what the mine's worth. He is covering it up, has fooled me with his accidents and delays. He knows the shape I'm in, that I can't hang on another week. I wrote him to expect Heatley, and I mentioned Helen's going, too. Fowler knows what Helen means to me, what her loss would mean. He knows Heatley is coming, what Heatley will learn. He knows Helen was with Heatley. . . And he wins through his unexpectedness."

He turned and pressed a button.

"Take this message," he exclaimed as the stenographer entered. "James Stover. (Look up his last letter and find out where he is. Duplicate this if you can't locate him exactly.) Helen lost in bush between Vermilion and mine. Believe Fowler has kidnapped her. No proof, but I'm sure of it. Go to Vermilion at once and find her."

"Now see if you can find Jim."

In a minute the stenographer was back.

"Mr. Stover's last letter says he will be at the Prince Arthur, in Port Arthur, to-day."

"Rush it," exclaimed Sumner. "He must catch that afternoon train."

"Stover can do it if anyone can," he went on to himself. "He knows every inch of that country, everyone in it. And he'd rather chase a thief than make the biggest strike in the district."

And then Mr. Sumner suddenly realized what Helen's disappearance meant, what Fowler had planned. Heatley, active in the search, would not go near the mine. There would be no report. Without a report there would be no extension of notes, no prevention of the disaster. But without Helen he didn't care.

CHAPTER IV.

REA STRAINE did not waken until she heard the woodsman pounding on her door the next morning.

"Breakfast," was the gruff announcement when she made a sleepy reply.

As she opened the door and went into the main room, her captor was sitting at the table, his plate heaped with potatoes and moose steak. Taking the chair to which he pointed with a well laden knife, the girl helped herself. The cooking, she was surprised to learn, was excellent, but the malignant glare of the squaw made a hearty breakfast out of the question and she soon left the table.

Outside, in the bright sunlight, she was joined by the woodsman.

"You can move about as much as you like, but don't get out of sight of the shack," he told her.

As she found a seat on a log at the woodpile, he returned to the cabin, from which soon came the sound of the squaw's high pitched voice.

But it was not until the middle of the forenoon that the man again appeared. He came from behind the cabin and he carried the bundle of food the girl had dropped at the corner the night before.

"Thought you'd get away, did you?" he accused.

"I have had no such intention."

"Where did this come from, then?"

"I am sure I don't know. I never saw it before."

The Indian woman came to the door, saw the bundle, and broke into a volley of Ojibway. The woodsman replied in the same tongue and then threw the bundle at her.

"The old lady's kicking up a row because she thinks I'm going to throw her out and have you for my woman," he said, as he sat down on the log beside Rea.

His manner had changed, and in his half drunken, awkward attempt at coquetry the girl saw her first real danger.

"Why don't you tell her it's not true," she said, for she felt that the enmity of the woman, becoming more bitter as time went on, might prove a greater peril than even this new attitude on the part of the man.

"Aw, she won't believe it. Don't know why you're here if it ain't to be my woman. She'll probably carry on this way long's you stay."

Rea was silent.

"She ain't my wife, you know," the woodsman went on. "Leastways, I never married her. I can kick her out any time."

Evidently he had been drinking ever since breakfast. He leaned toward Rea. She drew back and was about to rise when the Indian woman rushed from the cabin.

It seemed to the startled girl that the squaw used every word in her meagre language, in her denunciation. Wrath shone in her eyes, was seen in every feature, in every gesture. Rea turned anxiously to the woodsman.

Bleary-eyed, the man looked up as though amazed to see the squaw before him. For a moment he did not move. Then, his drunken anger aroused, he lurched to his feet and struck her heavily in the face.

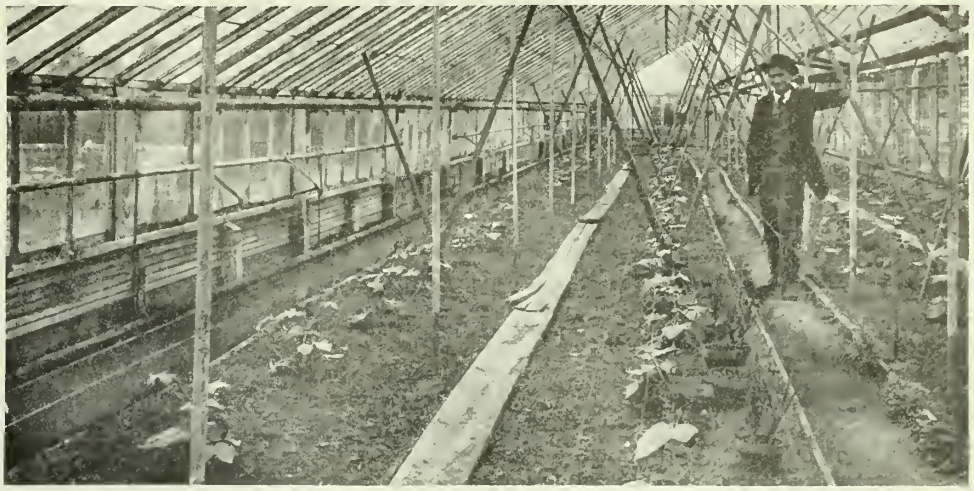
The squaw did not wilt and fall forward on to her face as does a boxer who has been knocked out. The force of the powerful blow carried her backward and she fell, her head striking a log used as a chopping block.

Rea's desire to run was overcome by a terror which surprised her as greatly as it held her motionless. The woodsman, his anger gone, turned with a grin and sat down on the log. The girl, revolted by his drunken smile, looked at his victim. A stream of blood ran down the side of the log and from under the squaw's shoulder. She hurried forward and lifted the black head. Underneath was a pool of blood. Stuck in the end of the log, one side of the bit uppermost, was an axe. The bit was covered with blood.

Rea turned the woman's head over and felt with fearful fingers under the thick, coarse hair. The look of anxiety on her face gave way to one of horror. With a bloody hand, she felt of the woman's wrist.

"She'll come 'round," said the woodsman. "Let her lie."

Rea did not answer. She thrust a hand inside the squaw's dress and placed it over her heart. For a moment she remained motionless. The woodsman was



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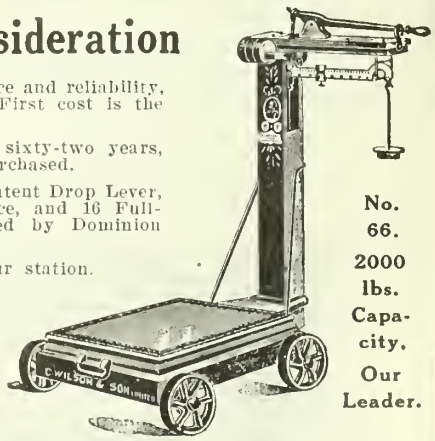

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THE sole head of a family, or any male over 18 years old, may homestead a quarter-section of available Dominion land in Manitoba, Saskatchewan or Alberta. Applicant must appear in person at the Dominion Lands Agency or Sub-Agency for the District. Entry by proxy may be made at any Dominion Lands Agency (but not Sub-Agency) on certain conditions.

Duties—Six months' residence upon and cultivation of the land in each of three years. A homesteader may live within nine miles of his homestead on a farm of at least 80 acres, on certain conditions. A habitable house is required except where residence is performed in the vicinity.

In certain districts a homesteader in good standing may pre-empt a quarter-section alongside his homestead. Price $3.00 per acre.

Duties—Six months' residence in each of three years after earning homestead patent; also 50 acres extra cultivation. Pre-emption patent may be obtained as soon as homestead patent, on certain conditions.

A settler who has exhausted his homestead right may take a purchased homestead in certain districts. Price $3.00 per acre. Duties—Must reside six months in each of three years, cultivate 50 acres and erect a house worth $300.

The area of cultivation is subject to reduction in case of rough, scrubby or stony land. Live stock may be substituted for cultivation under certain conditions.

W. W. CORY, C.M.G.,
Deputy of the Minister of the Interior.

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silent as he saw the grim horror in her eyes.

"She won't come 'round," Rea said slowly. "She is dead."

"Dead!"

The man's intoxication vanished as quickly as had his fury after striking the woman. He bent forward and felt of her breast. Then he turned her head over, saw the blood and the axe.

"That's your doings!" he screamed, looking up at Rea. "Hadn't been for you this never'd happened."

He rose to his feet and, as he did so, his hand fell on the handle of the blood-stained axe. For a moment he looked wildly at the girl. In his eyes she saw the fear of the slayer, the fear of the man who is covering his tracks.

"Drop that axe!" she said, sharply. "What would your life be worth, Pete Milford, if you killed the daughter of E. G. Sumner?"

Milford dropped the axe and stepped back. He thought of the actions of this young woman he had brought from the portage trail, her lack of fear, her composure, her absence of tears. What did she know? Who was she? How did she know his name?

As he stared, bewildered, Rea turned and walked slowly toward the beach.

CHAPTER V.

REA continued on down the shore to the south end of the island on which she was held prisoner. At noon she returned to find the cabin empty. The squaw's body had disappeared from the woodpile. After warming up the remains of the breakfast and boiling some tea, she satisfied her hunger and again sought the lake shore.

Her thoughts now turned to escape. Milford could not have left the island. She might be watched. In any event, she should wait until he began drinking again. She walked on to the canoe in which Milford had brought her to the island. It was floating in the water at the end of the beach.

Rea did not stop as she walked past it, for she did not wish to arouse suspicion if Milford were watching. But she saw that she would have difficulty in getting the craft. It was attached to a thick root of a pine by a heavy chain and padlock.

The canoe the squaw had told her of, across the island by the little trail, occurred to her, and she turned toward the cabin and found the path. But this canoe, too, was securely locked. It had been taken into the brush and chained to a tree.

Rea turned northward along the shore to learn how large an island she was on and, scrambling over rocks and through brush, came at last to the end.

A circle of pines shaded a large, flat rock which lay at the water's edge beside a small strip of sand beach. Far out across the lake lay the mainland. Other islands were to be seen near the north shore some distance away. Throughout the long afternoon she watched for a passing canoe, for some sign of the pres-

ence of a human being. At supper time she returned to the cabin to find it still empty. She prepared her meal and went to her room, taking with her a rifle that hung on the wall.

The next morning she heard Milford moving about. After he had left the cabin, she dressed and found a breakfast being kept warm for her in the oven. Two empty whisky bottles on the table confirmed her suspicions as to Milford's whereabouts the previous day.

After breakfast the girl again walked to the beach to look at the canoe. If she were sure Milford were not watching, she might attempt to break the chain and lock with the axe. But she did not dare risk that until she was sure he was out of the way. She turned on down the shore and found fresh tracks in the soft sand, leading to and from the end of the beach. She followed them aimlessly until she came to a place where the wet, coarse sand dug from beneath the finer, drier particles on the surface had been heaped and scraped in a low, narrow mound. At first the girl did not realize what it meant. Then she turned quickly away and went to the cabin.

After noon, when Milford had not appeared, Rea went to the north end of the island, to the broad flat rock. For a long time she sat there, looking out over the water, listening to the cries of a loon, watching the successful efforts of a kingfisher.

At four o'clock, her eyes, weary from the bright light on the water, she shaded them with her hands and lay back against a boulder.

"I beg your pardon," she heard a voice say at her feet.

She looked down, startled, to see a young man, dressed in khaki, high-laced shoes and a felt hat, sitting in a canoe beside the rock.

"I spoke for fear I would frighten you if you wakened suddenly," he stammered. "I was just paddling past, you know."

"You didn't frighten me," she answered, calmly.

"Guess, I was more startled myself," remarked the young stranger. "Paddling along through this country where you're sure there isn't a living soul for miles around—and then to see a young lady—well, it's rather apt to make a fellow think he's dreaming it."

To Be Continued.

Off to the Wars

Continued from Page 32.

"I gave to you my word that I would not an escape make," he said slowly and with dignity.

Billy turned away from the tent and sat down on a windfall before the fire. He felt strangely subdued.

"He could of got away, and he wouldn't," he muttered. "Now, who'd a thought that of a Dutchman?"

A little later Billy went back and wakened his prisoner.

"Who were those fellows?" he demanded.

"They tell me they are from the United

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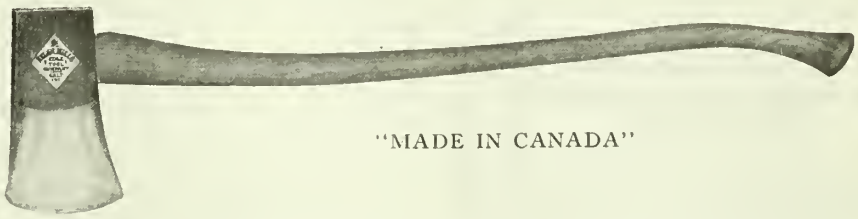

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States, making a trip by canoes in the forest."

"Did you tell them who you were?"

"No. They did not ask."

"Did you know they would be in the States in another day?"

"Yes, so they told me."

Billy went back to his windfall and sat for a long time. At last he crawled into the tent. He let Karl keep all of the one blanket, and he did not waken him the next morning until breakfast was ready. Then his tone was comradely as he called:

"Come on, lad, and throw some of this into you. We've got a long hike to-day."

Breakfast over, Billy packed up, loaded the canoe and indicated that Karl should get in.

"Don't we make this a portage, as you say?" he asked.

"Not this morning. There's an easier way around."

All day they paddled. Not once did Billy sing "Rule Britannia." His arms worked steadily, hour after hour, but his mind was troubled. Karl had spoken the day before of the rules of war and Billy didn't know whether he was following them. He had always thought of war as being closely linked with hatred, and he found that he could not hate a man like his prisoner. Then, at noon, he got an idea.

"I'm my own general yet awhile!" he exclaimed to Karl's mystification, and the canoe shot ahead faster than ever.

Late that afternoon they rounded a point in a large lake and saw a long line of birch bark teepees on the shore before them. Still silent, Billy turned the canoe in, and he and his prisoner got out.

"Wait a minute, Dutchy," he commanded and climbed the bank. Five minutes later he was back with an Indian.

"This is Moose-once," he explained. "He's a good Indian and he won't let you get lost. And he won't charge you too much."

"What is it you mean?" asked Karl blankly.

Billy grasped the German by the shoulder and about faced him.

"See that shore over there? That's the United States. Didn't you know you were traveling south all day to-day? Well, another half hour and you'd be where I couldn't touch you. Moose-once will take you to Tower, and you can get along from there all right because there'll be steel rails to keep you from getting lost. B'jou," and he ran down the bank to his canoe.

"But," cried Karl as Billy was about to push off. "I do not understand. I am your prisoner."

"That prisoner business is all off," explained Billy. "Don't want any prisoner."

"You mean I can—," and Karl held out his hand to grasp Billy's.

Billy smiled when he saw the expression in the other's eyes.

"You can, lad," he said. Hurry and get started."

Karl wrung his hand excitedly.

"I can't thank you," he began.

"Thank nothing," exclaimed Billy. "I'm fighting Germany, not a German, but I'll meet you in Europe next week."

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Greenhouse Construction

The Farmer Could Solve Some Labor Questions by the Building of a Greenhouse. Angle Iron Ones Are Favored

THE demand for greenhouse construction by gardeners, florists and even by farmers is on the increase in Canada. The reason for this lies in the urban demands for early vegetables, cut flowers, bulbs, and potted plants.

Moreover, the growth of vegetables under glass is yearly becoming one of the important parts of the vegetable grower's business. Intensive summer cultivation makes the early forcing of plants in a greenhouse, a necessity.

And the business is a paying one. Many suburban small farmers and even city dwellers are making good money, even at high land rentals.

The construction of a greenhouse then becomes of much importance to the farmer who is trying to overcome the labor problems. A greenhouse on a farm within easy transportation distances of large consuming cities, furnishes work during the winter months, so that hired men can be kept the year round.

The special bulletin by S. C. Johnston for the Ontario Department of Agriculture will be of much service to the man who is anticipating the building of a greenhouse this winter.

A hint is given as to the benefits that co-operative societies might find in erecting greenhouses, for the raising of vegetables as is done in the vicinity of Cleveland, Ohio.

He discusses location, the actual building, the different types of houses, ventilation, and heating.

Speaking of the location of the house, he sums up the points to be considered under the following heads:

1. Long hauls and re-handling increase the cost of production.
2. Proximity to railroads lessens hauls and handling, thus lessening cost of production.
3. Good roads mean good quality and better returns.
4. Low places should be avoided, and care taken not to locate where there is any danger of spring freshets.
5. Being in the direct path of the prevailing winds increases fuel consumption. Where possible windbreaks of trees should be used, or high, tight board fences should be built.

THE IRON FRAME.

The iron frame construction is receiving considerable attention at the present time. Such prominent vegetable men as John H. Dunlop, of Richmand Hill, and John D. and James D. Nairn, of Bartonville, as well as prominent vegetable growers in the vicinities of Boston, Rochester, Erie, and Philadelphia, who are competent men on greenhouse construction details, favor this form, and back it up by securing more houses as their demand increases. They are the best judges as to the value of these houses.

The advantages, as found out by Canadian users, are summed up in these words:

1. Cost of upkeep very small as compared with other forms of construction.
2. Solidity. The houses of this form have been in use thirty years and are still in good condition.
3. Cost less to heat.
4. Glass breakage is considerably less.
5. Lack of columns.
6. Minimum shade.

THE PIPE FRAME.

For growers having limited capital or those not desiring to build the first-class construction the pipe frame construction is considered as a good investment. This form of construction has met with approval in many parts of the States during later years and many houses of this style are to be found in Ontario. However, the growers in the United States who have had these houses are now building houses using the iron frame construction and the majority state they have better houses and are more satisfied with results. Men intending building small houses which will be used only as plant houses will find this form of construction best suited to their needs in many cases. The cost is not so high as those of the iron frame style but the difference is not so much as to warrant building a large range of the pipe frame construction. Both forms are giving good service but the preference is toward the more substantial and lasting form of houses.

ALL WOOD CONSTRUCTION.

This form of construction cannot be used economically because of the limited age of wooden parts. Wooden posts, usually cedar, are set four feet apart to form the side walls and the houses made very narrow requiring but few supports for the ridge. These have been found to be small trees cut required lengths, split cedar posts or two by four-inch scantling.

Hot bed sash usually forms the glass covering and these houses are sometimes called sash houses. This form of house is not to be recommended as a greenhouse. As a house used as a substitute for hot beds or cold frames it may be of some use in the early part of the season when it can be heated with a coal or wood stove. Many gardeners have used these houses in previous years and know their limitations and no gardener is advised to build one.

He concludes the bulletin, which may be had free for the asking, by giving the following advice to prospective builders.

1. All construction companies keep a staff of men whose business it is to give all information in regard to their forms of construction. They are there for the builders' benefit.
2. Find out all about the different makes before making your selection.
3. Do not give an order for material until you are satisfied it is exactly what you require.
4. If in doubt, ask or write some grower who will give you an unbiased opinion and knows whereof he speaks.
5. Successful growers follow the rules "the best is none too good" and "a poor thing is dear at any price."
6. Construction companies are used to building large ranges and will give you the benefit of their experience in regard to location, site, etc.
7. Insist that all the accessories, such as nails, ventilating apparatus, putty, paint, etc., be of first class and that they be properly used

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ALFALFA MEAL VS. BRAN.

K.D., Ontario: When bran is $25 per ton and alfalfa meal $20, which would be the more profitable to feed.

Answer.—Alfalfa meal has not been introduced to Canadian feeders much as yet but many on the other side feed it extensively. Alfalfa meal at $20 per ton is certainly cheaper feed than wheat bran at $25 a ton. In one ton of bran there are 1,230 lbs. of digestible nutrients, while one ton of alfalfa meal has 1,044 lbs. In a ton of bran there are 240 lbs. protein and in alfalfa meal 220 lbs.

GETTING DUCKS TO LAY.

Mrs. A. C. R., N.S.: How can I get my flock of Indian Runner ducks into early winter laying?

Answer.—There are many big duck raisers in the United States and the advice of a member of the staff of the University of Illinois, will answer this question. It will be necessary to have a good pen always kept dry.

About the middle of November, the birds are put on their laying ration, which must not be changed till the season ends. Feed night and morning the following mixture: Five parts of corn chop, five parts of bran, two parts of middlings, two parts of meat scraps, four parts of cut green stuff, five per cent. of coarse sand. Mix and moisten so the mass is crumbly. An addition of three or four parts of boiled vegetables is desirable if it can be provided. The "green stuff" may be rye, clover, oats, alfalfa, or whatever can be most easily provided. In the winter finely cut clover or alfalfa that has been scalded over night is a good substitute.

One large duck grower states: "In exactly three weeks after beginning this feeding, you will commence to gather eggs." Pekin ducks are splendid layers, and large flocks will average 120 to 140 eggs per duck in the season.

FEEDING APPLES TO MILK COWS.

E. J. S., Que.: Will feeding apples to milk cows have a tendency to dry them?

Answer.—This question shows some popular fallacies where the blame is not correctly placed. Apples are largely water, and have a low feeding value which probably accounts for the question. We cannot see that a ration that includes a few apples will hurt.

INGREDIENTS OF PATENT MEDICINE.

L. G., Ontario: As I suffer with headaches quite often and have been advised to take a well-advertised headache tablet, I would like to know what they contain. Do these patent medicine manufacturers have to record their formulae with the Dominion Government?

Answer.—Chief McGill, of the Laboratory of the Inland Revenue Department, says that the complete formulae for patent medicines are only registered with the department in special cases and under guarantee of secrecy.

All that is required is a statement of the presence and amount of certain drugs as per schedule attached to the Patent or Proprietary Medicine Act.

Even in this case the actual amount is not furnished, only the statement that it does not exceed a certain specified limit.

This leaves open a very serious menace to the health of Canadians and it is to be hoped that steps will be taken to assure to the people a knowledge of what they use.

HENS EATING EGGS.

R. C. D., N.B.: Last winter I had trouble with hens eating eggs. What would you advise?

Answer.—One man cured his hens of this habit by filling an egg with Cayenne pepper and grated horse radish, only two doses were necessary. Generally the best way is to get rid of the hens that have this habit. Prevention by nests is a good plan. A nail keg half filled with straw and fastened to wall on end makes a good nest and also one in which the smartest hen finds it impossible to destroy an egg. While this makes a good nest for the laying hen, do not set a hen to hatch in one, as it's too small and confined.

WIFE WANTED.

J. P., Alberta: You answered my question for a girl, thinking I wanted a hired girl. What I want is the address of some one who will discuss matrimony.

Answer.—Certainly, our questioner is engaged in a commendable search, but we are sorry we can not give him the necessary addresses. This is a business for himself.

SILOS INCREASING.

J. T. J., Sask.: Are silos on the increase in Canada and other feeding centers? Would you advise them for southern Saskatchewan?

Answer.—Silos are increasing fastest in those sections where they are known best. Even beef raisers find their value and this year many new ones have been erected in Ontario and the other Eastern provinces. Yes, southern Saskatchewan will find the silo a big help to their feeding operations where intensive dairying or cattle feeding is practised. The feeding of silage must be done inside warm stables and where a man can fatten cattle outside, having lots of cheap hay and grain, the need for the silo is not apparent. But as an economizer of feed and a labor-saver, there is not better practice. Corn is getting to be a big feed factor in the West, even now, and silos will take care of it best.

The *Rural New-Yorker* reports that Kansas farmers have 7,137 silos where in 1909 they had only 60. While Texas has added 15 silos per day for the past twelve months.

E. L. C., Ontario: Would it hurt small onions if I left them out all winter, in order to sell them for green onions in the spring?

Answer.—Onions set from the seed, when planted in the fall, are very liable to go to seed in the spring, if allowed to grow for ripening, but where they are intended for bunching early green onions will be all right, if they can survive the severe winter.

POULTRY RAISING.

Mrs. F. G. G., Quebec: Would it be possible for you to obtain for me a copy of your magazine containing the article "The Poultry King," that was published about a year ago, if I remember correctly. I would like this for a friend who is interesting himself in poultry as a commercial investment.

Answer.—This article appeared in the January issue of 1914, a copy of which we are sending you. In the October issue you will find a good article along similar lines.

GROUND LIMESTONE.

L. T., Essex, Ontario: I want a carload, about a 40,000-pound car, of ground limestone for use on a field where I intend to try alfalfa next spring. Could you tell me the nearest place where this can be obtained.

Do you consider the crushed rock O.K. for this? It is about the cheapest way of adding the necessary calcium, is it not?

Answer.—Ground limestone can be procured from the Crushed Stone, Ltd., 47 Yonge Street Arcade, Toronto. This firm prepares a very finely ground stone for cement work or it may be used for application to the soil. We have, however, placed a number of experiments with the limestone screenings from stone quarries, and although we have no results from these yet, I feel that it will be our cheapest source of carbonate of lime to the farmers. The Crushed Stone, Ltd., are the only people that prepare a specially ground lime, but nearly all the quarries are quite prepared to grind some of their material finer provided there is a demand for it. In the meantime, these experiments that I speak of having been placed with the screenings taken from the stone crushed for road purposes we have been able to procure at about 50 cents per ton f.o.b. at point of shipment. As there are a number of places scattered over the province where these materials can be procured it lowers the freight.

I do not think that there is any stone being quarried at Amherstburg now. If there were that would be the best place for Essex county. Failing this they will have to buy from either of the two firms at St. Mary's—the Horse Shoe Quarries, or the Thames Quarries—or the next nearest would probably be the Hagersville Contracting Co., Hagersville. This material is shipped in the open car, whereas specially prepared material is bagged and shipped in closed car, which means some difference in the freight.

What About Our Roads

Continued from Page 12.

It is therefore a question of a system. Where the people would unite on the construction of a road, as they have done in some parts of several American states, the work becomes a part of themselves and better results are obtained.

In British Columbia all roads are under legislative control. The very nature of that province's topography makes this imperative.

The movement in Ontario at the present time is for some system of joint township and provincial management that will ensure a better construction and a more equitable upkeep. In several counties the Good Roads Movement has done much to make the county roads better, advantage being taken of the grants from the provincial treasury as provided for under the late Liberal Government, and carried on under the Whitney regime.

In speaking of the roads question the *Weekly Sun,* which has always been an advocate of local control and for higher taxation and control of automobiles, says in a recent issue:

Governor Glynn, of New York, who is seeking re-election, makes a leading issue of the automobile roads on which his State has spent a tremendous amount of money. It may be assumed that automobile roads have become a public irritation. The modes of finance have often been objectionable. Two municipalities issued road construction bonds bearing interest at seven per cent. not to mature for more than two hundred years. There is lively dispute about the kind of road to be built. Macadam seems to have failed, because it will not hold under the strain of automobile traffic. It costs, according to Mr. Glynn, $12,000 a mile to build, $18,000 to maintain for twenty years, and $6,000 to rebuild at the end of the first ten years. That is a total cost for twenty years of $36,000 a mile. Brick, it is estimated, will cost for building and maintenance for twenty years, $40,000 a mile, and concrete with a bituminous surface $32,000. It seems that only macadam has been well tried under modern conditions.

There is complaint that roads have been built here and there without connection, very often merely to win political support. There has been a good deal of corruption by contractors, makers of road machinery and dealers in material, which has extended even to the legislature.

Ontario, invited to imitate New York, has only to devote a little more attention to her excellent gravel roads to be excused from a repetition of New York's expenditure.

The whole danger lies in the handling of big sums of money by politicians and in the reckless use of public funds where the immediate responsibility for them is not felt by the taxpayer. The political control of these funds is most abominable and instances of graft have already been made against one prairie province where huge appropriations are made for the roads.

If Ontario enters upon a system of better through roads, it will be to the interests of all to insist upon the funds being put under the control entirely of a highways commission, whose expenditures must be under the constant publicity of the legislature.

The great difficulty seems to lie in the cost of providing a lasting roadbed without the expenses of upkeep mounting to burdensome proportions.

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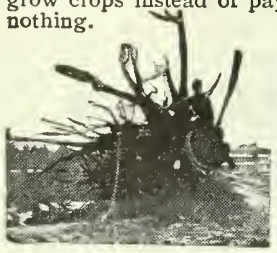

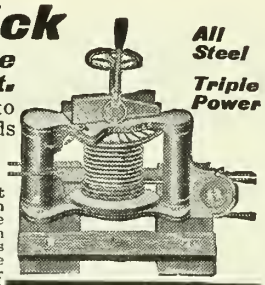

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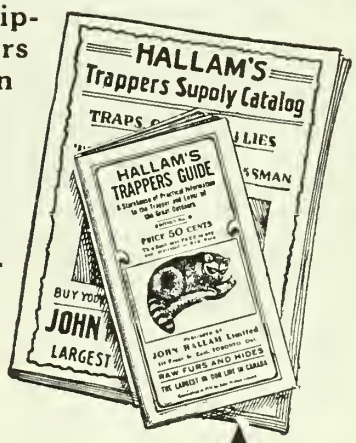

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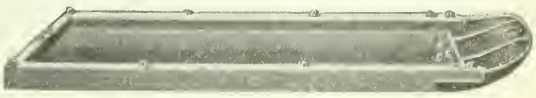

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nent roads, it is essential also that the control of the work be in competent hands. A continuous policy must be followed which will ensure only the best materials and a uniform grading and drainage system being followed. After that comes the upkeep, which suggests county or township permanent engineers with the oversight of all roads in the municipality at all times of the year.

Between Ourselves

A Drawer for Questions of Home and Family Interest

By GENEVIEVE

FRUIT AND VEGETABLES IN THE DIET.

Q.—Could you give me some suggestions for an institute paper on "The Value of Fruit and Vegetables in the Diet?" Mrs. H. R. B., Ont.

A.—In dealing with a subject like this, there is danger of attaching too much importance to the actual nutritive value, losing sight of the fact that the general wholesomeness of food is the important matter from the standpoint of health. For their nutritive value alone, fresh fruits and vegetables rank low among the common foods, because they are made up largely of water and cellulose, or indigestible fibrous material. This does not apply to the banana which is rich in starch, nor to the dried fruits from which most of the water has been evaporated and which have a fair content of sugar and proteid, nor to the starchy vegetables like potatoes and the legumes, beans, peas and lentils, whose proteid and starch are both valuable. The following table will give you some idea of the relative values.

	Water	Proteid	Starch and Sugar	Mineral Water	Cellulose
Apples	83	0.4	12.0	1.5	3.0
Pears	84	0.4	11.0	.5	4.0
Peaches	89	0.5	6.0	1.3	4.0
Oranges	87	0.9	9.0	1.3	4.0
Bananas	74	1.5	23.0	.9	.2
Raisins	14	3.5	75.0	5.0	2.0
Tomatoes	92	1.3	5.0	.7	1.1
Celery	93	1.4	3.3	1.0	.9
Asparagus	92	2.2	3.0	.9	2.1
Potatoes	78	2.2	18.0	1.0	.8

But the specific value of fruit and vegetables does not depend on the nutrients, but on the way they help to keep up the normal activity of the whole digestive process. The indigestible cellulose acts as a stimulus to the muscles of the intestines, preventing constipation, while the mineral salts and acids act as regulators in lowering the acidity of the blood and urine. I think it worth mentioning here that healthy children should not have their fruit peeled. A great deal of the valuable mineral and fibrous matter is lost with the skins. (Of course the skins of fruit that has stood uncovered in a store for some time had better come off.)

It would be a good idea to mention some of your favorite ways of serving fruit, and just now at the beginning of the apple season, the special uses of different varieties would be interesting. The following table is used by the New Brunswick Women's Institutes.

Variety.	Pies.	Sauce.	Jelly.	Baking.	Dessert.
Astrachan	Good	Excellent			Good
Duchess	Good	Excellent		Good	Fair.
Gravenstein	Excellent	Excellent		Excellent	Excellent
New Brunswicker	Good	Excellent		Good	Fair.
Dudley	Good	Good		Good	Good
Wealthy	Fair	Good	Fair	Fair	Good
Alexander	Good	Good		Fair	Fair.
King	Excellent	Excellent		Excellent	Excellent
McIntosh Red	Excellent	Excellent	Good	Excellent	Excellent
Bishop Pippin	Excellent	Good		Good	Very good
Bethel	Good	Good		Good	Good
Northern Spy	Excellent	Excellent		Good	Excellent
Russett	Fair	Fair			Good

GOOD MANNERS—INTRODUCTION.

Q.—I am preparing a paper for our Women's Institute on "Good Manners and Social Customs." I would appreciate very much any suggestion for topics to take up which would have a bearing on the social custom of country life, and also the recognized rules concerning introductions. Gertrude B. W., B.C.

A.—I would treat a subject like this from the standpoint that any social law worth respecting is the outgrowth of a regard for other people's feelings and convenience. The person who always has this in view will not make any serious breaches, whether he knows the outward forms of etiquette or not. For the individual's own comfort and self-possession, however, it is important to know the recognized usages of good form. A rough diamond may be worth a great deal, but the world isn't much influenced by its beauty until it is polished. The subject might be treated under the heads of: (1) Conversation—to avoid topics that might embarrass anyone in a company, such as the criticism of a religious sect; to keep away from subjects in which part of the company are not interested or into the discussion of which they cannot enter; to refrain from talking about oneself and to learn the art of drawing others into conversation; and, of course, to say nothing about an absent person that you would not say if they were present. To think before you speak is also most important. Tactless remarks would generally be prevented if the speaker would think ahead and put himself in the place of the other person. The use of slang, especially among girls and women cannot be too strongly condemned. It is not only vulgar, but some of it borders so close on profanity as to give an altogether wrong impression of the speaker. (2) Table manners should be taken up, but not so elaborately as to be confusing or ridiculous. (3) Wedding invitations, acceptances and announcements, birth announcements, letters of congratulation and condolence would also be in order. (4) How to teach politeness to children will be an important topic for discussion, and (5) Things girls should know about social good form at home and in public will be both interesting and helpful.

When introductions are given it is the man who should be presented to the woman, or when two women or two men are introduced the younger person is presented to the elder. In introducing two sisters, the elder is Miss Smith, the younger Miss Mary Smith. When two women are introduced it is not necessary for either to rise, and a woman does not rise when a man is presented unless he is very old or a person of great importance. A young woman does not offer her hand to a man unless she is meeting him a guest in her own house. But it is the height of ill-breeding when a hand is extended to ignore it.

One should never attach so much importance to form as to make anyone feel uncomfortable. Queen Victoria left a fine example in this. On one occasion an old lady, one of her guests at dinner, picked up her finger-bowl and drank the water. Immediately the Queen did the same thing, that her guest might not be mortified by discovering her mistake. After all, etiquette is just a matter of ethics.

FOR A RUSTED SINK.

Q.—We have moved into a house where the iron sink is covered with a thick coat of iron rust. How would you advise cleaning it. Mrs. E. J. A., Ont.

A.—You can clear away the rust if you will rub the sink with grease, sprinkle with chloride of lime and let this stand over night. In the morning take a whisk or mop and wash this off with a strong solution of hot water and washing soda. It would be wise then to give the sink a few coats of enamel.

MAYBE.

Robert noticed a farmer's wagon in front of a brewery.

"What is he after, I wonder?" he said.

"Malt, I suppose," he father answered.

"What does he want with malt?"

"Feed it to the cows."

"Do the cows like it?"

"I think so."

"And I suppose," observed Robert, "that is where we get our malted milk."

School Lunches

Continued from Page 16.

ment both because it provided the child with something better for him, and because it saved the preparation of sandwiches, etc. Of course they would have still to bring a certain amount of food from home. Senior pupils could probably in turn buy the supplies under the teacher's supervision.

If all this is impossible, at least a place should be provided where children could heat up something brought from home. Very strict rules would have to be adhered to in this case regarding the heating of the food and the cleaning up. But surely it is possible. The teacher would either have to stay herself or leave a senior pupil in command. A good disciplinarian can trust children in her absence.

If it is possible to heat up something taken from home, the child might provide a granite dish of some kind, or even use his dinner pail. Such things as milk soups, cocoa, eggs, milk puddings and so on could be safely carried in a dinner pail. One mother who watches her children's meals carefully, tries to always have some dish for dinner or supper the day before suitable for the children to take for lunch and makes an extra quantity. This could be done by many and a dish suitable for warming up usually chosen.

CONSIDER THE NOURISHMENT.

If, however, the providing of something warm is not possible in any way—then the least we can do is to see that we give them something nourishing; but the warm food to begin the meal is not only more tasty but it warms up the little stomach so that it can work more readily and more easily. Cold food must be raised to body temperature before the digestion begins—also the digestive juices flow more freely when a dish is attractive. But to resume about the fact that they must have something nourishing. Every meal should have something to build and repair the body, something to provide heat, both to heat the body and to furnish it with energy and something to provide water and mineral salts. For building and repairing the body, milk and milk dishes are always good but milk is rather hard to carry. Milk puddings could be packed in a glass or small bowl. Eggs in any form are good, boiled hard and taken whole or made into sandwiches, Cheese whole or grated and made into sandwiches could be easily digested by the child who takes plenty of outdoor exercise. A cheese mixture for sandwiches is easily made and kept on hand. Grate the cheese, add salt, pepper and mustard to taste, also a little melted butter vinegar to work it into a paste. Meat can be made into sandwiches in slices or can be first ground—also chops or legs or wings of fowl can be taken whole wrapped in a paper napkin. Waxed paper is so convenient in putting up school lunches or picnic supplies. It adds to the neatness and cleanliness of the lunch, and keeps it from drying out. Simple nour-

When Stores are Dear

And remember that every bottle of Bovril contains the nourishment and stimulating qualities of *many pounds of beef.* It is because of its unique *feeding* properties that Shackleton, when planning his great Antarctic Expedition, said—**it must be Bovril.**

Of all Stores, etc., at 1-oz., 25c; 2-oz., 40c; 4-oz., 70c; 8-oz., $1.30; 16-oz., $2.25. Bovril Cordial, large, $1.25; 5-oz., 40c; 16-oz. Johnston's Fluid Beef (Vimbos), $1.20.

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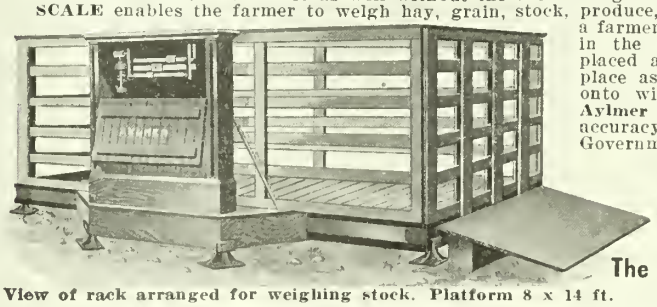

View of rack arranged for weighing stock. Platform 8 x 14 ft.

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ishing salads can be made and packed in a glass; beans, rice or potatoes make a good foundation for these. To this add a little left over meat or fish and a little seasoning or salad dressing and you will have a nourishing and tasty dish. Nuts make an excellent food and if you can get any beech nuts or hickory nuts or walnuts, gather them for school sandwiches or to be taken whole. They are even more nourishing than meat. Jam sandwiches are good in their place but are really not nourishing enough alone for the growing child. Fruit is always appreciated and one can scarcely eat too much in the winter. The child who has fruit right through to spring seldom needs a tonic. Candy is a splendid heat producer. A little can always be given in a school lunch if you can trust the child to eat it at the end of the lunch. Sweets are harmful in two ways when taken on an empty stomach. First they burn the linings of the stomach as they are strong, secondly they kill the appetite for nourishing food. The worst time to eat it is on the way home to supper or dinner and that is when our city cousins so often buy it.

HOT SUPPER AT NIGHT.

Where poor lunches have been provided, the harm can be rectified to a certain extent by always having some hot nourishing supper dish when the child arrives home. Some children who have a warm breakfast and warm supper do not seem to be harmed by the long day without good food but few children can go a long winter day without a certain amount of harm, and certainly we sometimes see country children looking "peaked" and anaemic which should never be.

"And why," you ask, "is all this fuss made over the dinner pail? We got along with less trouble and are still living." But are we living with good sound bodies and minds capable of the best results? The stronger we are bodily and mentally the more we can accomplish every day. Little children, and big children are building up bodies and minds for future use and we *do* want to make them capable, and *poor* food does so leave its mark. Nature will not be cheated. She is relentless and makes us pay a penalty for carelessness. Every child is building up new flesh and bone and if we want capable men and women we must make them out of good material even if times are hard. A boy or girl, man or woman is no better physically than the food eaten. Some people make better use of the food because they take proper exercise and proper rest as well. All are of infinite importance to the growing and developing person.

The Campaign for Citizens

Continued from Page 8.

odd twist has been given to our thinking that causes us to regard labor as having in it something of a curse. Till this false notion is got rid of, till the coming of the day when cheerfulness shall abound with industry, men can neither become nor do their best. At the present moment the average country and high school presents the sad spectacle of the people paying teachers to encourage boys and girls to get away from the farm. In our high schools seventy-five per cent. of the pupils are from the country, yet a miserably small per cent. of these ever think of returning to the land till committed thereto by the undertaker. One high school class of twenty-eight pupils was asked to indicate how many were intending to be farmers. But one boy indicated his intention of following that vocation. The folly of it all is seen when we remember that the farmers are paying for the schools that point the way in any direction, along any road that leads anywhere but to the green fields and the blue sky and the free air of God's out-of-doors.

TRUE AIM OF EDUCATION.

The new way of looking at and of doing things in the rural schools is no attempt to divert a pupil from medicine or law or commerce should any of these prove to be his natural bent in life. Its aim is to give the country boy and his sister some wide conception of the opportunities the country possesses of living a life that will at once mean financial and moral progress. It aims to give the open eye for the principles that lie beneath good agriculture.

It strives to show how plants grow, what birds are man's helpers, what bacteria and other forms of animal life are the friends of human progress and what forms are inimical thereto, but above all else it aims to open the inner eye to the things without which no one can long be happy or even measurably contented.

The great primal instinct of every normal person is the assurance that he has been set in motion by a Higher Power that calls for the best that is in one. The nation that gives this instinct the truest and best direction is the nation that will have the best of citizenship. Hence the claim of the country boy and girl for the best that the school can supply. As Canadians have learned lately by the dread thunder of cannon, there are certain wants that are primal. In the days of peace it is easy to mistake whims for wants. Men who know the history of the race understand that the following out of whims and fancies has not unfrequently paved the way to ruin.

Let no one be deceived. There is a real rural problem that never can be solved by those who do not love the country and its needs. The solution of this problem will be found only by those who are in sympathetic touch with country people. The man who toils and spins in the city will do well to remain in sympathetic silence as to ways and means of meeting the needs of the man who wrings his own and the country's food from the soil. Too long have educational and political and social leaders spent their time in deploring what they call the dourness of the farmer.

They have shouted for up-to-date methods and in the comfort of their armchairs have outlined ways and means of "meeting the farmer's needs" and in demonstrating "that if the farmers would only adopt good business methods" or "practice scientific farming" that an agricultural millennium would speedily dawn. Meanwhile the farmer must live.

THE DESTROYING CRUISERS NEAR.

Bug and frost and blight and drouth and hail and a thousand other conditions that science has not learned to control and that so far baffle the best that the farmer can do, hang like an enemy's cruisers upon his efforts to get his financial ship to port. Little wonder, then, that the farmer touches new schemes with a wary hand. Still less is it to be wondered at that he has nothing but contempt for any scheme that does not emanate from the school of hard knocks. "Show me" is the slogan, and events show that his cry is wrung from hard won experience. His apparent apathy to new ways of doing things is the outcome of the fact that he has seen many a well-laid scheme for rural amelioration go far agley.

Nor will it do to repeat the old cry, "The best of our boys and girls are leaving the farm." The fact is that in most cases the city and the professional classes have claimed only the boys and girls who have not the stuff in them to solve the hardest problem that faces any Canadian —the conquest of the soil and the making not only of a living but a life while in contact with the land. Surely no Government will stand by and leave the youth who are willing to undertake a task from which their more fortunate or less courageous brothers unbefriended by her schools and uninspired by her best teachers. Yet that is what has been done so far, to the external shame of this nation. Little wonder that we complain that our land is not developing along lines that have in them the elements of permanency. For a boy or girl to wring an education from a high school he or she must leave home in the days when home is needed most. Only those who have thought of it know the loss that accrues from such a course. Little wonder that only a small per cent. of the population undertakes the risk. The best of the university and the best of the Agricultural College must be united in a living way with the life of the youth of the rural schol and that under the shadow of the home roof tree.

Too long have we made the mistake of confounding book-worming with the enlightenment that comes from the contact with events and men and things under the guidance of teachers whose own souls have been kindled with the divine fire. Once light up a boy's spirit and it makes but little difference whether he forges anchors or measures cloth or pleads in the forum or drives the plow, you have given him a leaven that will work till he rises to the stature of a perfect man.

The Dual Purpose Fowl

War Times May Bring the Poultry World Back to the Dual Purpose Hen

THERE is so much talk these days about the difficulty of making a profit with a utility plant unless one has a special egg trade that one would think eggs were the hen's only asset. Have poultry growers overlooked the meat-producing ability of our dual-purpose breeds? asks a writer in an exchange.

That such a question is both timely and important is strikingly shown by the present meat situation in this country. Beef, mutton, pork and veal have been steadily advancing in price since the outbreak of the European war, and the end is not yet in sight. In contrast we find that market poultry has maintained a normal level as regards price, and in some instances has been offered for even less than the prevailing prices of a year ago.

A DOUBLE-ACTION MAINSPRING.

With such conditions existing it is natural to assume that the frugal housewife will depend largely upon the various classes of market poultry as an economical substitute for the higher-priced meats. Yet with the constant increase in the special egg farms it would appear that the poultry keeper has failed to recognize this additional channel for profit making.

A combination of egg production with poultry-for-meat raising is the double-action mainspring of Taylor's farm, and after thirteen years of successful work in both branches I felt sure that this man was in a position to furnish some tangible information as regards the merits of our so-called general-purpose fowls. Hence my presence on Taylor's farm one day last August.

Taylor led the way to the laying houses, as we were looking over a splendid flock of 500 Barred Rocks I asked him if he could give me definite figures of the average egg yield of these eight and nine-pound birds.

"I cannot give you the exact production of this particular pen," he said, "but the average last year for some 900 birds was about 135 eggs a hen.

"We keep the layers only through the pullet year," he explained. "They are then fattened and shipped to market. Several years ago we followed the plan of removing half the flock each year and keeping the others until they were two years old. The old birds, however, did not produce eggs like the pullets and were inclined to become overfat and to break down. So we abandoned that plan and now use only pullets for our market eggs."

"Tell me," I said, "how do you manage to get an average of 135 eggs a hen? The operators of many exclusive egg ranches tell me that the American breeds will hardly lay enough eggs to pay for feed and labor."

EGGS FROM ROCKS AND REDS.

"Use pullets and hatch them early," was his quick answer. "A great many people who have trouble in getting satisfactory egg yields from the Barred Rocks, Wyandottes and Rhode Island Reds do not hatch the chicks early enough. The birds of these breeds are three times as large and as heavy as the Mediterranean egg machines, and in order to have a seven or eight-pound pullet begin to lay in October or early in November you must give it time to grow and plenty of good, clean, wholesome feed to grow on. If people would only pay attention to these simple fundamental requisites they would find the dual purpose hen just as prolific a layer as the lighter and more active breeds.

"Speaking of the laying ability of the dual-purpose breeds, I think it might be a good thing for you to include in your story the fact that a pen of White Wyandottes has for some time past been leading all other breeds in this respect at one of our largest egg-laying contests. That will give these egg-machine fellows something to think about."

Comparison of the egg records of Taylor's birds with those of other flocks of dual purpose breeds and also with the records of some large Leghorn egg farms easily proved that there was nothing remarkable about Barred Rocks making an average yearly production of 135 eggs, and also that, in spite of the Leghorns' reputation as much superior layers, the American breeds are easily their equals in the matter of high production.

Among the American breeds I found one flock of 150 birds that averaged 196 eggs each; a flock of White Wyandottes that averaged better than 200 eggs each for the year; and a flock of 300 Rhode Island Reds that averaged more than 165 eggs a hen for the year. Referring to the Maine Experiment Station records, I found that during one year they had close to 50 hens that by actual trap-nest records produced between 200 and 250 eggs each. Such individual records as 234, 211, 237, and 213 eggs a hen for the year are typical of the performance of these Barred Rocks at the nest.

In studying the records of the Leghorns I found one flock of 600 birds that made an average individual production of 196 eggs. Several other flocks, somewhat smaller in size, varied in production from 162 to 190 eggs a hen a year. In all the cases cited, however, the birds were bred for egg production and utility purposes and not for the show room. Thus it would seem reasonable to assume that high egg production is not a question of the breed of fowls maintained so much as it is the result of the methods of the man or woman behind the feed bucket.

Taylor ships all his eggs to a company in the city. They net him the top of the market at his home town. No special effort is made toward an extra-fancy product, but care is exercised to see that the eggs are clean, of uniform size and absolutely fresh. Thirty-dozen crates are furnished free of cost by the company.

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One application KILLS all Mites and prevents their reappearance during the season. Keeps fowls free from body lice. Makes scaly legs bright and clean. Keeps lard, pastry and sweets free from ants. Bedbugs will give no trouble where used. Write to-day for special trial price. Booklet free.

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5th—Any boy who can drive horses can do as good work as the best plowman.
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Write for full particulars about this Famous Dick Lever Plow Wheel Attachment.

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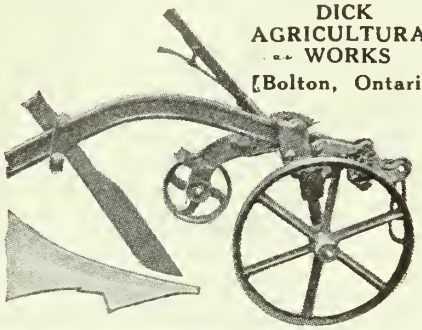

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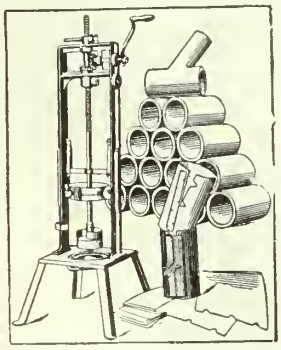

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We buy outright in any quantities
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Largest Grain and Provision Brokers on the Spot
QUEBEC, CANADA

NOVEMBER ON THE FARM

By GRASMERE

This typical November scene was photographed by the editor from a leading rural roadway in Ontario. The "sugar" maples on the left are a magnificent row. The big tree on the right is a fine example of how grand the maple becomes when it has room. It naturally assumes a handsome shape. The well-rounded roadway is covered with the red autumn leaves.

"For over there an upland thrush is speaking
Of joys she knows among these swaying pines:
Not all the rhythm of my eager seeking
Can faintly echo her ecstatic lines."

Even in November, with its leafless, uninviting garb, the joys of country life cannot extinguish the glad spirits of him who likes his work and his farm home.

That is poetry but not fact, may be your rejoinder, as you put up with the little oft-repeated vexations of the ordinary farm routine. Quite true in many cases I admit. But what is fact and what is trouble? Are not all ills the result of the way we look at the event? Take for instance, the battle's toll of that fine boy who essays to fight the foe for our sakes and for freedom's cause. The father's and the mother's griefs are assuaged by the glory that surrounds the sacrifice. It is lightened by the sentiment of the affair. It is the way we look at it.

The farmer can look upon his business and his labor in the same manner. To such no ill ever happens, because his spirit rises above it and changes it into a glad experience and a profitable investment. You have met such men! So have I! They are big men, helpful neighbors and good farmers.

How different a November morning looks when you are feeling well. How changed appearance grows under an attack of indigestion!

The moral lies in keeping the digestion good, in man as well as in animal life. Therein lies the value of these timely hints, many of which will not be needed, but the one that is will amply repay perusal. This is the lookout of the ship, as one Saskatchewan subscriber nicely put it. Let us torpedo every farm enemy by more care in details.

GETTING UP WOOD.

Where wood is burned in the house, this is the month for securing the winter's supply of dry wood, hauling it to the buildings and making it easy for the housekeeper to get. Coal should be provided for the winter. See that all stovepipes are cleaned out and all protection made against fire.

IN THE GARDEN.

Destroy places for pests. Burn all diseased stalks and all rubbish. Protect trees from mice. Clean away dead grass from trunks and places where mice will harbor. If danger from sunscald in the spring stand a board in front of the tree on the south side to prevent direct action of sun's rays.

DRAG YOUR ROAD.

Before freezing-up time, every farmer would do himself credit, and the public good, by operating a road-drag over the road in front of his farm. If systematic and constant dragging were given to thousands of miles of Canada's roads in the fall, the chances are that these roads would come out in fair condition in the spring. In many cases the surfaces are uneven and the gravel worked off to the sides, a road-drag will prevent ruts and mudholes.

It is surprising how the farmer who would not be guilty of any suggestion of slovenly farming, will allow a mudhole on the road in front of his place, when a wagon load of gravel and an hour's dragging would remedy it.

THE FALL HATCHED CHICK.

Many a late hatched chick can be made into profit if a little care is exercised. They should not be allowed to roost in with the main flock, but kept in comfortable coops where there is plenty of clean, fresh air, no draughts and plenty of food. Just as sure as the half-grown or smaller chicks are put in the hen house, there is a stopping of their growth, they begin to look all wing feathers, possibly get sneezy colds and water at the eyes, and if looked for at night would be found crowded under the larger birds, breathing the bad air near the floor. These pullets can be made of profitable use next spring and the cockerels make you unusually big prices in the winter.

BANK THE HOUSE.

Where there is danger from freezing in the cellar by reason of a poor foundation, it is well to bank the house now. Use clean straw and cover with earth. Many stables might be treated this way also. Be neat about the work.

REPAIR BUILDINGS.

Where it has not been done, now is the time to repair the buildings, by renailing the clap boards or by seeing that the outside sheeting, the roofing and eave-troughing are in perfect order.

GIVE THE BOY A BROOD SOW.

Interest your boy in good breeding by giving him a pure-bred sow to look after and have for his own after paying you for the feed. It will interest and teach him valuable lessons, as well as make the farm income bigger. Teach him to keep up the registrations and to keep books of the cost. Besides being interesting work, there's money in it.

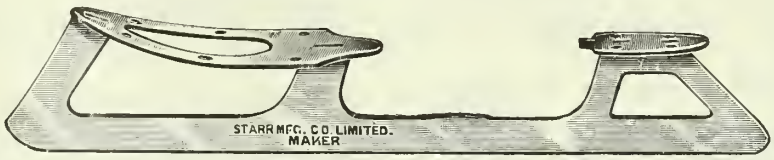
FEED THE TURKEYS.

To finish turkeys for market, place them in a room with one or two windows and darken these, always allowing plenty of air. Keep the pen clean. Feed liberally to meal rations, whole corn and wheat. By this way the whole of the flesh formed is retained for market.

THE SHOW BIRD.

The fall and winter poultry shows are coming on. Keep the birds healthy, in clean quarters, with lots of fresh water and pure air. Accustom them to handling.

HOCKEY SKATES FREE



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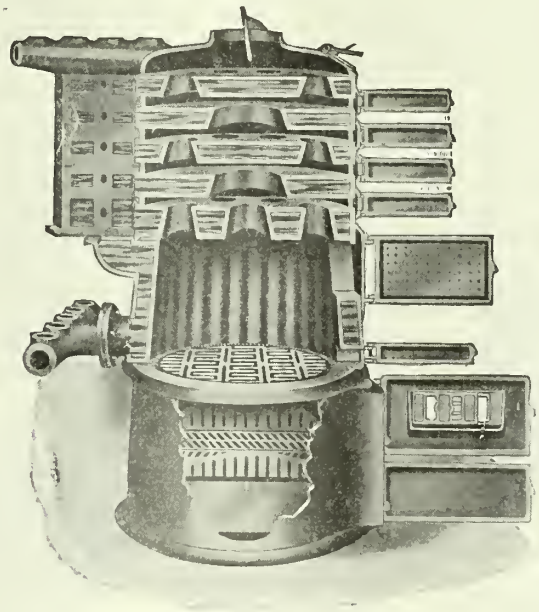
Send us your name and we will send you the cards to sell. When sold send us the money and we send you the skates. We pay charges

Homer-Warren Co., DEPT. 37 TORONTO

The "Sovereign" Hot Water Boiler is built to save fuel



"Sovereign" Hot Water Boiler.

You do not need to watch the fire continually to keep it from burning too much coal. And it will save coal without depriving you of any of the comforts of a well-heated home. It will give more heat from the same amount of fuel than any other Hot Water Boiler or heating apparatus made in Canada, or made elsewhere.

It is the wide-flared flues that give the "Sovereign" its increased heating efficiency, and adapt it at the same time for burning soft coal or wood between seasons when the same steady amount of heat is not required as in the severe wintry weather.

Send your address to our nearest office for "Sovereign" Bulletin No. 1. This chart will convince you, almost at a glance, how it comes that the "Sovereign" Hot Water Boiler promotes fuel economy and has an increased heating capacity. Mention "Farmer's Magazine."

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Made of high-grade iron and constructed so that it will remain on bottom of tank without being fastened down. Can also be used to heat Poultry Sheds and Outbuildings. The smokestack, being independent of the cover of the heater, can be extended out of the building without the slightest interference with firing the Heater. Burns any kind of fuel and with proper care will last a lifetime.

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Let us send you samples and prices of this feed. Send for your sample to-day.

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The Famous Edwardsburg Brands

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Never scare them. Study the breed points. Be severe in your own judgments. Do not excuse anything because the fowls are yours. Breed for stamina first, and feathers, combs, and carriage afterwards. You are sure to win out.

CLEAN OUT POULTRY HOUSES.

Clean, disinfect, and repair the henhouse. If lice are bad, burn sulphur in the house after closing all the openings. Then wash thoroughly with a strong solution of crude carbolic acid, using coal oil on roosts and in places where lice are likely to hide, then apply a good coat of whitewash in which lime is freely used. If the hens are badly infested it may be necessary to treat them individually.

HAVE PLENTY OF NESTS.

See that all the layers are supplied with nests. In the best equipped houses 75 nests are allowed for 100 hens. Keep the nests clean and renew nesting material often. Clean nests means clean eggs. Clean, fresh eggs spells clean profits. Never take dirty eggs to market. It tells your character too near the bull's eye. Eggs will be high from now till January 15th. Keep them coming and then going. Make hay while the sun shines.

ABOUT THE POULTRY FEEDS.

Supply sand and dry dirt boxes. Sand is wanted for grit, and should be in hoppers where it will not get dirty. Provide plenty of vegetables in the cellar for them. Have hoppers for mash feeds, so that hens can't get their feet in. Cooked pumpkins are good for hens. Buy your grain feeds now. An extra feed of whole corn when night promises to be severe is good policy. Buckwheat is also good.

HOUSE ROOM AND ROOSTERS.

Do not crowd too many hens in the house. Hens do not lay when overcrowded. Take all the roosters out. Make hens roost off the floor away from drafts. Keep out all drafts.

CANADA IMPORTED EGGS LAST YEAR.

During the fiscal year ending March 31st, 1914, over 11½ million dozen eggs were imported into Canada. These came from Great Britain, Hongkong, China, Japan, New Zealand, and United States. Surely Canadian poultry keepers can supply the demand this year. If all help in this matter there should be no lack of eggs and if care is exercised in the production there should be a good revenue to the producers and the consumer ought not to pay such exorbitant prices as sometimes have been asked in the time of scarcity.

WHY NOT DONATE TO BELGIUM.

Canadian breeders of poultry might do worse than plan to donate breeding stock to the Belgium farmers, for use next year when the war clears away from that distressed country.

CLEAN, OIL, AND PAINT IMPLEMENTS.

Before putting the plows and other implements away for the winter, thoroughly clean them, grease the wearing parts of tools, paint where necessary and then put them away. A rainy day can be well utilized this way. And the saving in machinery and the comfort of having tools ready in the spring is worth a lot.

MAKE A COMPOST HEAP.

Get sod three inches thick and pile up layers with the grass side down. Put cow manure between one part of manure to three of sods. Turn over a couple of times during the winter.

COVER BULBS AFTER FIRST FROST.

Leaves or coarse straw make a good covering for the bulb beds after the first frost has frozen the ground, not before.

START MUSHROOM BEDS.

Now is the month to begin your mushroom beds. Send to your seed man for his book of directions.

COVER STRAWBERRIES.

Strawberry beds should be covered with hay or straw this month. If the bed has been cleaned of weeds and kept in regular order, the straw will lay on the ground as a mat for the spring berries.

JOT DOWN FARM EXPERIENCES.

Set down your garden, poultry, livestock or other farm experiences, draw a plan of your new barn, or sketch a labor-saving implement and mail it to the FARMER'S MAGAZINE. It may be worth printing and make you some money besides.

STORING POTATOES.

Potatoes should all be in the cellar before frost. They freeze easily. If pitted in the field, dig a trench about three feet wide and two to three feet deep. Put about six inches of bright straw in the bottom and six inches around the sides. Be sure potatoes are dry and free from rot, before placing them in the trench. Do not pile more than two feet deep. Cover with dry straw. Then add dirt as weather demands it. Later on manure can be covered over this. Provide ventilators. Ordinary four-inch tile standing on top of potatoes and extending up through the straw and dirt will answer, although 1x4-inch boards nailed in a triangle, three or 4 feet long do better. Place them every ten feet, if the trench is a long one.

CARROTS AND TURNIPS.

These can be stored the same way as potatoes, if there is no cellar room. A few carrots make good feed for horses

KEEPING APPLES.

They may be kept in pits like the way described for potatoes, but they are generally stored in cellars and cold storage warehouses. Apples should be put in dry, kept dry, and all rotten ones picked out. Boxes four to six inches deep make the best bins. Common lath for the bottom and sides allow free circulation of air. These boxes can then be set on top of one another.

STORING CABBAGE.

The plan outlined by a Kansas grower looks good. He says that cabbage for win-

Do You Know A Boy Who Is Waiting For This Book?

HE may have the few tools and materials to be found in every household, or he may possess his own complete chest of tools and well-equipped workshop, but something is lacking — He needs ideas—suggestions of things to make or do. He is tired of all the things that he and his companions have been able to think of. Now there are hundreds of other boys scattered all over this big country who have many new and interesting ideas he has never thought of, but how can this one boy ever get in touch with all these others? In just one way—through the pages of

The Boy Mechanic

The Great Book of 700 Things For Boys To Do

These original, practical suggestions have been furnished by hundreds of boys who have actually built and experimented with the devices they are now telling other boys how to build. In no other way could a book containing such a wide and interesting variety of contents have been prepared, for no one author or staff of writers, for that matter, could have possibly gleaned such a wealth of ideas from their own observation and experience.

The Boy Mechanic Represents the Best Accomplishments of the Mechanical Genius for the material used in the book is a careful selection of only those articles which are new, practical and of more than ordinary interest; the selection having been made by mechanical experts who still have active recollections of their boyhood interests.

It gives complete directions for making all the things boys love to build and experiment with in the fields of electricity, mechanics, sports, arts and crafts work, magic, etc., such as Electrical Appliances—Steam and Gas Engines—Turbines—Motors—Wireless and Morse Telegraph—Self-Propelled Vehicles—Toboggans—Ice Boats—Canoes—Paddle Boats—Punts — Camping Outfits — Tents — Fishing Tackle — Magic Lanterns — Searchlights—Cameras—Telescopes—Gliders, Kites and Balloons—Electric Furnaces—Lathes—Pottery Kilns, etc.

A boy would be an old man before he could make half the things described in this wonderful book. It is entirely different from any other published and has

A Few Practical Features:

¶ A large number of the things described may be made from old cast-off articles which the average boy has at his disposal.

¶ Many articles involving the purchase of only a few cents' worth of material will be found fully as serviceable as similar ones costing several dollars.

¶ Scores of handy things the family can use in the home are described.

¶ Finally, this book will develop and interest the boy along mechanical lines and educate him at his play.

"Wish I knew what to make"

700 Articles-480 Pages-800 Illustrations

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It is clearly printed on high-grade book paper and durably bound in cloth. The cover is of an attractive design in four colors showing a boy building a small boat. There are ten solid pages of index alone. Neither care nor expense have been spared to make this the greatest boys' book published, and to enable as many boys as possible to have one, the price has been made absolutely as low as possible. It would be difficult to think of a way of investing $1.50 that would benefit a boy as much as through the purchase of one of these books.

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ter storage should be pulled out of the ground, roots and all, with as little breaking of the leaves as possible. All the leaves should be left on, unless they are rotting. In that case, put the heads with rotted leaves by themselves to be used first. Place the cabbage in a good cool place until it gets so cold that freezing seems likely; then it is time to put them away for winter. If cabbage is put away while the weather is warm, it is sure to rot. If you store the heads in the cellar, they can be put in boxes or barrels, heads downward with all the leaves and roots left on. Or the heads can be hung downward from the top of the cellar. Keep the cellar dry and well ventilated.

If it is desired to store a great deal of cabbage, dig a pit as for potatoes or apples, except wider. Place the cabbage in its, heads downward, and allow the roots to stick up. Build them up by layers until you have a heap like a cone-shaped haystack. When the pile is completed cover it with straw or cornstalks and three or four inches of earth well patted down with the spade. Then add another layer of fodder or straw and another layer of three or four inches of earth. This will maintain the right temperature in cold or warm winter weather. When the weather threatens to become very severe add plenty of barnyard manure to prevent freezing.

CELERY.

When the weather threatens to become too severe, pull your celery up by the roots and stack it in an oblong heap with the moist, loose earth. Cover well with earth, using no litter or straw except next to the celery. Put on enough earth to prevent freezing. If the pile is very large, ventilators, similar to those described in connection with potato storage, should be used. Straw or manure may be used in very cold weather on top of the earth. Storing celery in the row without pulling it is practised by some growers, but that requires a great deal of work to prevent freezing, and the method keeps the celery no better than piling it up.

ONIONS.

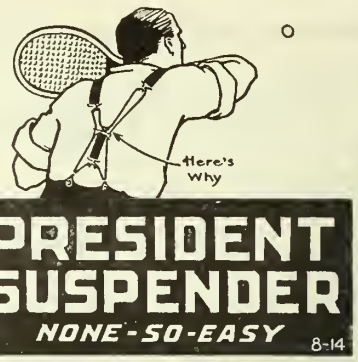
Onions are uninjured by even hard freezing if they are not disturbed while frozen. If a cold spell freezes the onions in an outbuilding in the fall, simply cover them up and leave them alone so long as they remain frozen. Some have kept them in the barn covered with chaff all winter, and in the spring found them as good as ever.

LOOK AT YOUR PIPES.

Carefully pack all water pipes before severe frost. It is easier to prevent freezing than to thaw out pipes. Examine your sewage system. Have extra pipe, unions and elbows and a pipe-wrench always ready in your workshop.

PUT ON STORM DOORS.

Storm doors, windows, and weather-strip should be put on now. Putty all glass where needed. Some good woolen stripping will keep out much cold around old doors.



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An appropriate Christmas card, expressing the wishes of the donor, will be mailed along with the first issue of the magazine, so as to be received before Christmas morning.

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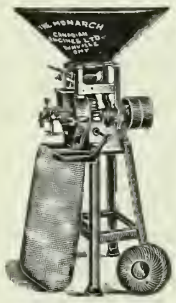

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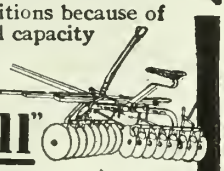

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AND HOW TO FEED

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KEEP COW STABLES CLEAN.

Keep all manure cleaned out daily. Insure pure drinking water. Don't forget the salt.

CLEAN OUT OPEN DRAINS.

A wise man will go over his open ditches this month and clean out the rubbish so that the water will run off freely.

WEIGH THE MILK.

The winter time is a god time to begin cow-testing. Some of your favorite cows may be doing poor work. It is best to know definitely.

TAKING IN THE COLTS.

The winter time is a good time to begin the colts will have to be done judiciously. Do not confine too closely at first. Feed fairly well, using a succulent ration. The colt's first and second winter mean much to his usefulness as a horse.

PLANT PEONIES NOW.

The old peony is one of our best garden bloomers. It will save a year's time to plant now. Wet the plant thoroughly before separating the roots so that soil will adhere. Spring moving of peonies disturbs the rootlets too much. Many other perennials are best moved in the fall.

BRUSSELS SPROUTS.

Brussels sprouts are a timely late fall dish. Remove the wilted leaves on the outside of the sprouts, and boil them in salt water for fifteen or twenty minutes. Drain the sprouts; put butter, pepper and salt on them, and serve with white sauce, or cold with mayonnaise dressing.

THE CALVES.

Dairy calves, especially the heifers, need little attention besides bedding, feeding and exercise. The box-stall is their best stable at night. The beef-making calves must be kept growing at their best. The silo is the great labor and feed saver in both these herds.

GET MORE LIGHT IN YOUR STABLES.

Sunlight makes your feed go further. It keeps disease germs killed. It aids digestion by keeping the animal contented. In fact many windows in the stables means more money. Knock in a few this month. Do not wait, life is too short. Be efficient now.

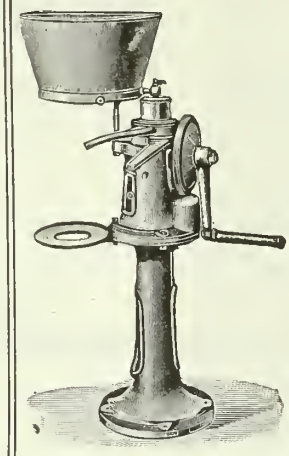
AUCTION SALES.

The fall is the big auction sale time in Eastern Canada. If you are preparing for a sale, get everything in the best shape and do not deceive. Play the man. If you go to a sale, go to help and not to knock. Do not encourage the auctioneer to favor you. He is hired to get all he can for his employer.

WITH THE DAIRY HERD.

There ought to be little difficulty in keeping the health of the dairy herd in good condition this month. Protect them from cold driving storms, stable drafts, and from eating frozen refuse that will taint the milk and check good digestion. Study the best ration for each cow. Any old method of feeding will do for the

THE PREMIER CREAM SEPARATOR



Made throughout in the largest and best equipped separator works in the British Empire. The highest grade of material, workmanship and finish. All wearing parts renewable and interchangeable. All revolving parts enclosed. Machine-cut gearing. Working parts easily accessible. Bowl easily and quickly cleaned. Skims cleanest. Simplest construction. Lasts longest.

Write us for Catalogue "P," which shows the practical features of the Premier and gives useful information of interest to dairymen. Free on request.

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Canadian Stock Food for horses and all animals.

Omazon prevents or cures all diseases by purifying the blood. Gives appetite as well as vigour and endurance; assists digestion and increases the quality and quantity of milk in the mare and cow, and in addition makes for the development of the animal.

Mixed with food it curtails the quantity of grain required.

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The Horse's Friend

This preparation cures all the diseases of the respiratory organs, like coughs, ringworm, etc. It helps also on the kidneys and prevents worms. Follow the directions closely.

Ask for our circular C, which gives some valuable information about the proper care of horses.

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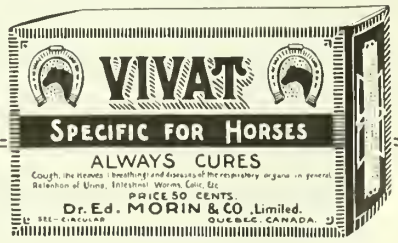

MAKES HOGS GROW FAST

The digestive organs of a hog have to take care of an enormous amount of food to produce rapid growth—consequently they need some kind of tonic to keep them in condition.

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MADE IN CANADA

is a mixture of roots, herbs, barks and seeds. It enables the hog to take care of all the food necessary for rapid growth, keeps the blood pure and the animal free from disease.

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It is sold under a spot cash guarantee of "your money back if it fails to do all we say," by dealers everywhere in 25c., 50c., and $1.00 packages and 25 lb. pails.

Write, telling us how many head of stock you own and we will send you our complete book on the diseases of stock and poultry. "The Inter. Vet. Digest."

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Can the Principles of Efficiency Be Applied to Nation Building?

The Financial Post in a recent issue said that when history comes to be written it will be found that the Kaiser was the greatest business man in the history of the world; that he was great because he has been able to gather about him the ablest business and professional men in the Empire.

MacLean's Magazine for more than a year has been running a series of articles on the great men who have aided the Kaiser. They are now published in book form. The author is Frederic W. Wile, the correspondent of the London Daily Mail, who has lived in Berlin for fourteen years and was in the closest touch with the leading men of the German Empire. Mr. Wile was thrown into prison immediately after the war started; but was rescued by the American Ambassador and accompanied the British Ambassador in his escape from Germany.

For a thorough understanding of the vast and efficient organization behind the German Empire, Mr. Wile's new book, "Men Around the Kaiser," will prove of timely value.

In it Mr. Wile sketches the characters of those now in the thick of Germany's fight for existence. There are chapters on Von Tirpitz, who is directing the naval warfare on England; on Von Bethmann-Hollweg, the Imperial Chancellor; on Ballin, of the Hamburg-American Line, which stands to lose in the war probably more than any other single German undertaking; on Von Gwinner, banker and railroad builder; on Von Jagow, the Foreign Secretary; on Prince Lichnowsky, the German Ambassador to England; on Field-Marshal Von der Goltz, organizer and strategist; on Dernburg, a business man in politics; on Count Zeppelin, who has equipped the aerial leviathans, which fly the battle flag of the German army and navy, with searchlights, wireless telegraphy, bomb-tubes and machine guns to carry the warfare into England; and other of the inner circles of the Kaiser's counsellors at this crisis of his reign.

The MacLean Publishing Co., Ltd., 143-153 University Avenue, Toronto, secured a limited De Luxe Edition, bound in "silk lustre" cloth, of "Men Around the Kaiser." As long as the supply lasts, copies of "Men Around the Kaiser" will be mailed to any address, on receipt of $1.00, postage paid.

careless farmer. The best farmer wants results.

BE LIBERAL MINDED.

Farmers, especially the talking, smart-alec type, too often brag about their little tricks and petty wisdom. The Kaiser is of this type. The world wants a liberal-minded, fair, slow-to-judgment and charitable man to listen too. Don't blow!

HELP YOUR CHURCH.

Do not forget to give your church generous help this month. The church is our best guarantee of safety temporally from thieves and oppressors. Besides, what is property anyway? Many a farmer is unhappy and a grouch because he never gives. Try a change.

CONSIDER YOUR HOME MERCHANT.

Are you helping to make your farm and neighborhood better and more valuable by giving all the assistance you can to the local dealer. Tell him what you want and then bargain with him for a fair deal. If he will not meet you, then there is time to go to the far away place with your money.

JOIN THE UNITED FARMERS.

Join your farmers' association now. Make the whole neighborhood brighter this winter by a good fall start. All farmers should belong. The manufacturers have their association and are loyal to it. Do likewise.

VISIT THE SCHOOL.

Too few parents visit the school. Why not ask the teacher to have an old time public examination before school closes for Christmas? Have you ever studied consolidation of schools? Don't knock unless you know.

WITH THE SHEEP.

The flocks will be all mated at the latest this month, although many will have attended to this earlier. Use the shears on the dirty sheep. Provide salt, charcoal and sulphur.

MAKE A SHEEP-RACK.

If you have sheep to feed this winter, now is a good time to make a good hay-feeding rack. Provide against getting chaff and other feed into their wool. Lamb feeding will likely be a profitable game this winter. Do not feed roots very freely. Send to Livestock Branch, Ottawa, for Bulletin No. 5 on the care of the sheep and lambs. It is good.

WITH THE HOGS.

Brood sows will do well around the stock or in a straw-covered pen, with an ear or two of corn and a mangel at a feed. If you have alfalfa feed it daily on a cement floor and see how it will act as well as meal. They will clean it up. Prepare fattening pens for market in November and February. One writer says that his herd sows winter in the individual houses and if they are kept properly bedded they will pair off about two to a pen and there will be no crowding at night which is one of the chief things to be avoided in a herd of heavy sows.

The Tale of the Karakule

Continued from Page 6.

Some importers have complained severely of the difficulty experienced in getting any live karakule bucks through quarantine in Canada as the regulations are so drastic with regard to Asiatic importations. Similar regulations exist in the United States, although Dr. Young has succeeded in getting some karakule sheep on to his farms. Such sheep when accepted by the United States are apparently accepted by our officials after a due quarantine detention has established their clean bill of health.

Dr. Torrence, the Veterinary Director General, states:

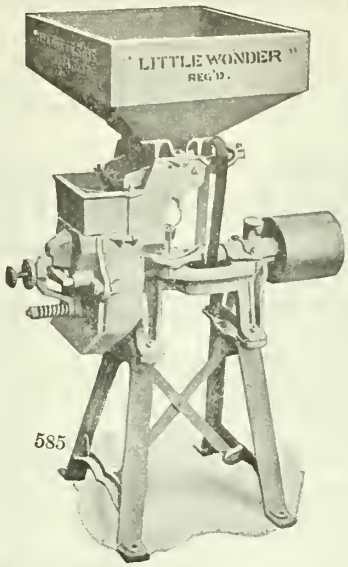
"This department absolutely prohibits the importation of any ruminants or swine from any of the Continental countries. This has been found essential owing to the fact that many of these countries have no sanitary supervision over their livestock, while the regulations in many of the other countries are either inadequate or they are not rigidly enforced.

"In some of these countries very serious and dangerous diseases are more or less present all the time. These countries are so suitably situated that it is an easy matter for any of these diseases to be carried at any time from one end of the Continent to the other. It is, therefore, never safe to allow the importation of these animals, especially so when it is considered that our livestock have not at any time been exposed to these dangerous diseases and have, therefore, not had an opportunity to acquire any degree of immunity. Many Continental animals may carry serious infectious diseases to immune animals, although they themselves may not be affected with the same malady.

"You will, therefore, readily understand that when there is such a strong possibility of introducing several diseases, any of which might result in tremendous losses to our livestock industry, that the department assumes a very determined attitude in the matter, although some shipments might arrive without carrying any infection. This country would suffer sooner or later if importations from the Continent were allowed.

"The United States have allowed a few importations of karakule sheep, but these have only been permitted under certain definite conditions. In this connection I might point out that this department has no objection to allowing any animals to be imported into this country which have been accepted by the American authorities and have been held in American quarantine stations for the period required by these authorities.

"As this is a question which has given the department continuous trouble I shall be only too glad to give you any further particulars you may desire."



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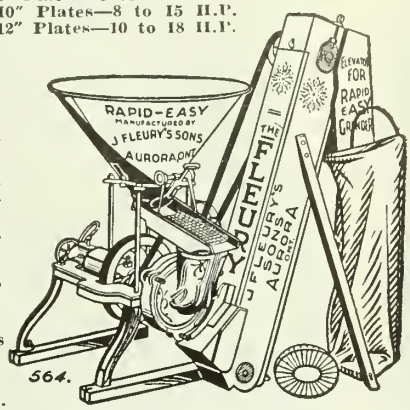
And still heavier Grinders for Threshermen — Nos. 3, 3A, 4, 5; For Custom Mills, Nos. 6, 11 inch; No. 7, 13 inch and 13, 16 and 18 inch "Attrition" Grinders.

Ask for catalogue or circulars. Tell us the power you use and we will advise best machine.



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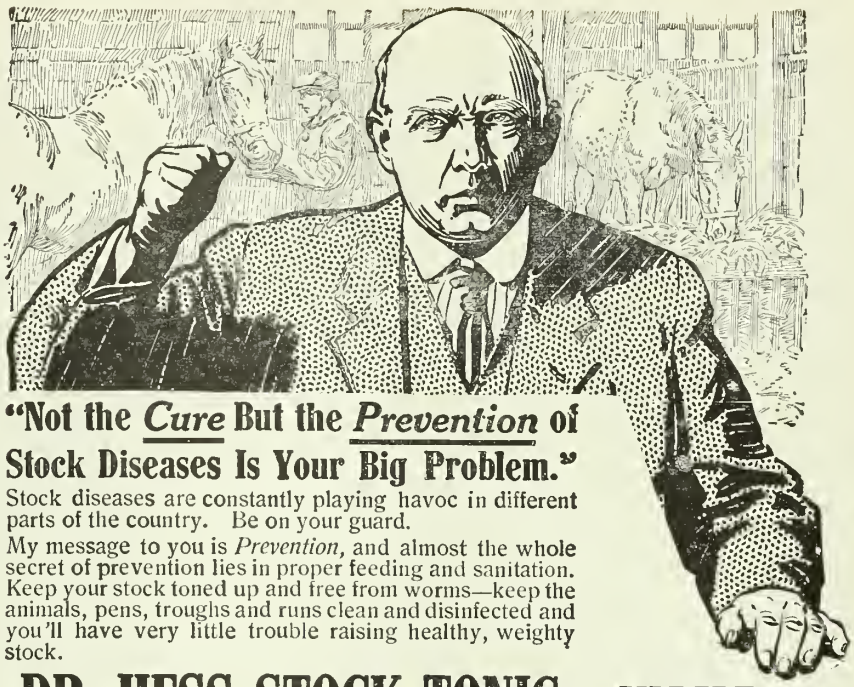

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FARMER'S

MAGAZINE

CHRISTMAS 1914.

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For the coming season we are making a feature of service, and have added to our equipment so that now we have a daily capacity of 150 miles of finished fence every ten hours. We are going to carry an extra large stock throughout the entire season and this, with our increased capacity, will enable us to ship all orders the day they are received.

Stop for one minute and think what price you were compelled to pay for fence before the Sarnia Fence Company came into the field, and in recalling old prices, think where they would go if our competitors could get rid of us. For the past four years, we, with the support of the farmers, have managed to keep the price of fence down, and with your further assistance we will continue to do so. We want your order, whether for one bale or a carload.

Without the enthusiastic support the farmers gave us three years ago the Government, in all probability, would have put the fence sizes of wire on the dutiable list, and placed a bounty on all steel produced in Canada. Either one of these would mean the return of the old prices of five years ago.

WE SET THE PRICE, OTHERS DEVOTE THEIR ENERGY TO TRY TO MEET OUR PRICES.	PRICE Less than Carload in Old Ontario	PRICE Less than Carload in New Ont., Que., Mar. Provinces
5-40-0 HORSE AND CATTLE FENCE. Has 5 line wires, 40 in. high, 9 stays to the rod. All No. 9 Hard Steel wire, spacing 10, 10, 10, 10. Weight per rod, 6½ lbs. Price per rod, freight prepaid	18c	20c
6-40-0 HORSE AND CATTLE FENCE. Has 6 line wires, 40 in. high, 9 stays to the rod. All No. 9 Hard Steel wire, spacing 7, 7, 8, 9, 9. Weight per rod, 7½ lbs. Price per rod, freight prepaid	21c	24c
7-40-0 HORSE, CATTLE AND SHEEP FENCE. Has 7 line wires, 40 in. high, 9 stays to the rod. All No. 9 Hard Steel wire, spacing 5, 6, 6, 7, 7½, 8½. Weight per rod, 8½ lbs. Price per rod, freight prepaid	23c	26c
7-48-0 HORSE AND CATTLE FENCE. Has 7 line wires, 48 in. high, 9 stays to the rod. All No. 9 Hard Steel wire, spacing 5, 6, 7, 9, 10, 11. Weight per rod, 9 lbs. Price per rod, freight prepaid	23c	26c
8-40 GENERAL STOCK FENCE. Has 8 line wires, 40 in. high, 12 stays to the rod. All No. 9 Hard Steel wire, spacing 3, 4, 5, 6, 7, 7, 8. Weight per rod, 10½ lbs. Price per rod, freight prepaid	28c	31c
8-48 GENERAL STOCK FENCE. Has 8 line wires, 48 in. high, 12 stays to the rod, all No. 9 Hard Steel wire, spacing 4, 5, 6, 7, 8, 7, 9. Weight per rod, 11 lbs. Price per rod, freight prepaid	29c	32c
9-48-0 GENERAL STOCK FENCE. Has 9 line wires, 48 in. high, 9 stays to the rod. All No. 9 Hard Steel wire, spacing 3, 4, 5, 5, 6, 8, 8, 9. Weight per rod, 11 lbs. Price per rod, freight prepaid	29c	32c
9-48-O-S SPECIAL HORSE AND CATTLE FENCE. Has 9 line wires, 48 inches high, 9 stays to the rod. All No. 9 Hard Steel wire. Spacing 6, 6, 6, 6, 6, 6, 6, 6. Weight per rod, 11 lbs. per rod	29c	32c

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CASH WITH THE ORDER SAVES EXPENSE AND YOU GET THE BENEFIT OF THE SAVING IN THE PRICE.	PRICE Less than Carload in Old Ontario	PRICE Less than Carload in New Ont., Que., Mar. Provinces
9-48 GENERAL STOCK FENCE. Has 9 line wires, 48 in. high, 12 stays to the rod. All No. 9 Hard Steel wire, spacing 3, 4, 5, 5, 6, 8, 8, 9. Weight per rod, 12 lbs. Price per rod, freight prepaid	31c	35c
10-50 HORSE, CATTLE, SHEEP AND HOG FENCE. Has 10 line wires, 50 in. high, 12 stays to the rod. All No. 9 Hard Steel wire, spacing 3, 3¼, 3½, 4¾, 5½, 6, 8, 8, 8. Weight per rod, 13¼ lbs. Per rod, freight prepaid	33c	37c
11-52 HORSE, CATTLE, SHEEP AND HOG FENCE. Has 11 line wires, 52 inches high, 12 stays to the rod. All No. 9 Hard Steel wire, 3, 3¼, 3½, 4¾, 5½, 6, 6, 6, 7. Weight per rod, 14½ lbs.	37c	40c
9-52-0 HORSE, CATTLE, SHEEP AND HOG FENCE. Has 9 line wires, 52 inches high, 9 stays to the rod. All No. 9 Hard Steel wire, spacing 4, 4, 5, 5½, 7, 8½, 9, 9. Weight per rod, 11¼ lbs. Price per rod	30c	32c
15-50- STOCK AND POULTRY FENCE. Has 15 line wires, 50 in. high, 24 stays to the rod, top and bottom No. 9 Filling, 12 Hard Steel wire, spacing 1⅞, 1⅞, 1⅞, 1⅞, 2, 2, 2½, 3, 4, 5, 5, 6, 6, 7. Weight, 12 lbs. Price per rod, freight paid	37c	40c
WALK GATE, 3½x48, Freight paid	$2.50	$2.75
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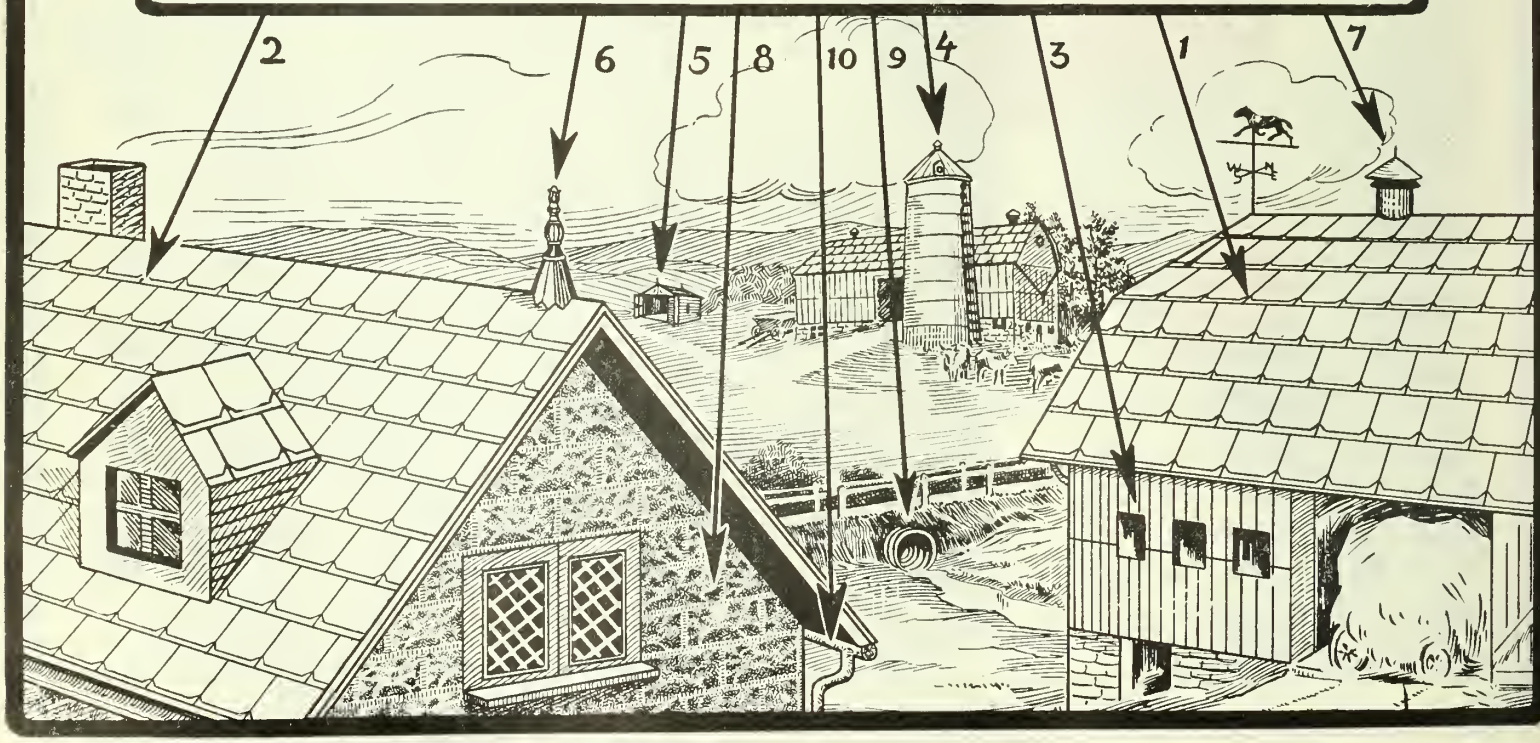

FARMER'S MAGAZINE

FRANK M. CHAPMAN, B.A., Managing Editor — ETHEL M. CHAPMAN, Associate Editor

DECEMBER, 1914

ROUNDING ANOTHER YEAR.

Again the Christmas month carries its greetings to all out upon the farmsteads of Canada. Strange things are taking place in another hemisphere. Farms and farmer folk are suffering vitally. Belgium's intensive farming and Flanders' peasant homes have been made into a wilderness-

The farm always bears the brunt of war, whether overrun by armies or overburdened by economic depressions. There can no good come out of war! But good will follow it.

Canada will arise from the fray, probably better than any other. It all depends upon the men and the vision out yonder in the farm homes, on the hillside and prairie.

Farmer's Magazine, with its virile messages from many pens is opening the eyes to that vision. The gleam already breaks along the hillsides and pine slopes in a joyful resurrection of agricultural hope. We share the burdens of a world, and sharing it, occupy the high seats of service in a poradise of opportunities. Follow the gleam.

In this well chosen issue we present to our readers a feast of good things. This number is no holiday spurt. It is the usual careful message of leading agricultural writers and practical farmers on the things before us to-day. Every issue of Farmer's Magazine is a special.

In this issue you will note the wideness of the subjects treated and all by experts in their line. W. D. Albright, well-known to our readers, carries a true Xmas message to every farmer. It is a real gem. Genevieve made a visit to Unadilla farm for the regular housebuilding article and gives us something that is practical because it is in use now. Bliss Fawcett of New Brunswick, the biggest strawberry grower, tells how it is done. James E. Poole, the greatest American cattle authority, tells about futures in cattle. A. P. Marshall, the vice-president of the Dominion Poultry and Pet Stock Association, advises how to avoid chicken troubles. Walter Simpson of P.E.I., tells the big story of Co operation in Eggs. Andrew Kyle brings manufacturers to a consideration of farm machinery needs. F. C. Mackenzie tells about the Icelander as a farmer in Manitoba. W. L. Smith estimates Canada's chouces after the war. Inspector Lees wants Consolidated Schools. Women are appealed to mightily by Miss Chapman's special articles. Short stories by Pinkerton, Sullivan and Justus Miller adorn these farming tales.

The whole magozine, say many of our subscribers, who have so kindly written in recently, is a distinct tribute to agriculture.

The coming year will see its usefulness grow. Despite the wastage and losses of wars, the future issues will be bright with interesting, helpful, articles for the best farmers, who want ideas on how to increase their efficiency. Good farms mark the readers of Farmer's Magazine.

Saskatchewan's co-operative experiments are being handled by W. W. Thornson. W. A. Craick has his sugar beet article ready. A second Good Roads contribution, Intensive Farming returns from the Bay of Quinte county; Wheat Growing Secrets; Housebuilding and Barn Building articles; Horses, Dairy Cattle, ond Poultry specials give some idea of the January outlook.

Carry the story to your neighbor and you will present him with a Christmas cheer that will be to him a constant pleasure and profit throughout the year.

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Service alone has kept one tire to the fore. Tires have come and gone, but Goodyears continue to lead because of their master features—their correct construction that makes for super-service in all seasons, on all roads

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The FARMER'S MAGAZINE

Vol. VIII TORONTO, DECEMBER 1914 No. 2

The Poetry of Achievement

By W. D. ALBRIGHT

The completion of a year's work on a homestead in the Peace River has given the inspiration for this article. Every farmer will appreciate the spirit of it.—Editor.

EVERY MAN is a poet and his life work a composite epic. Some express themselves in language, but the great majority of us reveal our characters in what we accomplish with our hands or in some form of tangible achievement. As Wolfe expired on the Plains of Abraham he breathed the purpose of his soldier's career in those undying words, "Now, God be praised, I die happy." The fate of a continent had been sealed. It was the supreme climax, the opus magnum of his life.

The essence of a poem is not its form, its rhyme or rhythm, but the mood, the concept or vision which inspired it. Among the stateliest poems in print are the Psalms of David, which do not even take the form of stanzas. But they are paeans of praise, poems of incomparable rank. Composed chiefly upon the occasion of critical epochs in the author's life, they breathe the mainspring impulses and motives of his being: rejoicing and gratitude and trust and hope and faith.

"Praise the Lord with harp; sing unto him with the psaltery and an instrument of ten strings.
"Sing unto him a new song; play skilfully with a loud noise
"For the word of the Lord is right, and all his works are done in truth."

The Song of Solomon, the Book of Job and all the rest of the Bible, indeed for that matter all the literary product of the ages, whether phrased in verse or paragraph, are poems—the interpretation of an impulse, mood, thought, vision, or perhaps a passion for collaboration or research. Some of the most exquisite poetry occurs in the form of prose. The most prosaic worker is something of a poet. Whether conscious of it or not, there is alive or latent within him the Divine spark of inspiration which lifts him above the clod and enables him to feel and appreciate even though he cannot in words of his own express the sublime mood which Byron voiced in that superb panegyric, "The Ocean":

"There is a pleasure in the pathless woods,
There is a rapture on the lonely shore,
There is society where none intrudes,
By the deep sea, and music in its roar.
I love not man the less, but Nature more,
From these our interviews, in which I steal
From all I may be or have been before,
To mingle with the Universe, and feel
What I can ne'er express yet cannot all conceal."

Who could fail to respond to the impassioned majesty of that stanza? Few could describe, but all must in some degree participate in the poet's exalted mood as he penned the inspired lines. The most prosaic among us has enough of the artistic temperament for that. It is possession of such artistic temperament rather than the ability to conjure with words, that entitles us to class ourselves with the poets; and who shall gainsay our right?

The soul of the poet dwells in us all. Happy the worker in whom the artistic sense is well developed for to him no toil is drudgery. It lifts him above the clod. There is poetry in his work.

There is poetry in nature. There is poetry in all things. Life is invested with an interest beyond prosaic literalness. For him there are "sermons in stones, books in the running brooks, and good in everything."

* * *

Expression is a primal law of life. Use or lose is nature's proverbial motto. We grow by what we achieve. It is not so much the lecture the student absorbs as the essay he produces that develops capacity. The topical thought of this paragraph was approached from another angle in a lecture delivered some years ago by Sir John Willison before an Ontario audience of newspaper men. "The root motive," he explained, "that lures us into journalism is the public spirit that was born within us, and that will not be denied expression." There you have it, the instinctive longing of the mind to express itself. This law of expression applies to the physical also. The muscles of the athlete tingle with the impulse for action. "Rejoicing as a strong man to run a race." The spiritual instinct finds expression in worship and various forms of religious exercise. Religion that is not practised dies. We are enriched by what we produce and give out. The penalty of withholding our faculties is atrophy. Wherefore, as the preacher says, it is well for a man to rejoice in his work—to realize an artistic satisfaction in the product of hand or brain. It is his portion. More, it is a law of being, neglected to his inestimable loss.

* * *

Forms of expression are manifold as the faculties and impulses of which they are the representation. Few of us can express ourselves adequately in words. Even Byron, with all his gift of rhetoric could not begin to voice the mood he experienced while contemplating the resistless power of the ocean. Happily, it is open to all of us to reveal ourselves by some avenue of concrete achievement. The painter represents ideals in picture, the sculptor in statuary; the musician in chords. In any

case the mechanical execution of the work should be the smaller element of its value. The concept is the greater part. Yet here, we must not overlook the fact that the artist will be revealed not alone in the conception but as well in the degree of thoroughness and pains and skill with which it is conveyed. In every simple act or course of conduct in life characteristics are liable to be exemplified. Thoroughness and integrity in a factory hand are shown in his unwillingness to slight any detail. The farmer writes his character upon the land, even as he did in the days of Solomon:

"I went by the field of the slothful, and by the vineyard of the man void of understanding;

"And lo, it was all grown over with thorns, and nettles had covered the face thereof, and the stone wall thereof was broken down.

"Then I saw, and considered it well; I looked upon it and received instruction.

"Yet a little sleep, a little slumber, a little folding of the hands to sleep.

"So shall thy poverty come upon thee as one that travelleth, and thy want as an armed man."

* * *

Do you see a farm where every fence and furrow is straight, where all the buildings are trim and neat, where every implement is sheltered, where all the work is well and precisely done? A thorough-going man is responsible for that place. "Good enough" is never good enough for him. Every task must be performed just right. It is the character of the man. A neighbor is differently constituted. Expansion is his ideal. His acres are many and his fields wide. His ambition is to achieve on a large scale, whether well or otherwise. It is the character of the man. Enterprise is denoted on the next farm by modern buildings and facilities, up-to-date equipment and general evidence of the newest and best ideas. Enterprise is a predominant characteristic of this man, as painstaking thoroughness is of the first. Passing on, you note a homestead where livestock is the outstanding feature. Horses or cattle and perhaps sheep or swine of high class, whether registered or grade, are bred here and the owner's chief pleasure as well as pecuniary interest is in the molding of animal forms. The set of a horse's hock or the spring of a steer's rib is a thing of beauty to him. With an artist's eye, he takes in the ensemble of each individual in his stud, herd or flock. To him the breeding of live stock is invested with as much true artistic pleasure as painting could be to a Rembrandt or music to a Beethoven. He is as much an artist as they. A near-perfect gelding, heifer or sheep is to him a poem.

* * *

A boy toiled in a garden. It was an exceptional boy and an exceptional garden for the one took a pride in the other. He had planted with circumspection and tended with diligence. From causes beyond his control, weeds had temporarily got the better of him, but he was waging battle successfully with scuffler, rake and hoe. Completing his task, he stood up and surveyed it. The loose, brown, moisture-retaining soil mulch offered a perfect bed for plants to grow in. Every row was straight and neat; every space was clean. The rows all ended even, forming a true rectangle. The space within the garden fence was clean as the planted area. Not a stroke had been spared. The task was perfectly performed. The desire of his heart had been accomplished. The lad's character had expressed itself. It was his psalm, his poem. He had made a song with a hoe.

* * *

A woman planned a home. Long had she dreamed of it, considered it and hoped for it. Many years had been spent in a plain, inconvenient domicile and all the while she longed for a house that would measure up to her ideal. It should be attractive though simple in its architectural lines. It should typify an idea of shelter and homeliness and rustic simplicity befitting its environment. Interiorly, it should be tasteful, convenient and suitable to the purpose of a simple home. So she planned and sketched and replanned and sketched again, blending features she had sized upon here and there and working all into a harmonious order. With minute care she had considered every sink and cupboard, every line of plumbing, the stair-case, the walls, the ceiling, the picture moldings, the location of registers and stoves, the doors, the windows, the verandas and all the rest. The finish of the wood-work was decided with a view to the ultimate scheme of decoration. Every detail was thought out with reference not only to its own desirability but with constant regard to the composite whole. The architect and workmen had upset some of the minor details necessitating difficult rearrangements, which, however, had been mostly accomplished without seriously marring the harmony of the whole. The carefully-wrought ideal had been translated into visible, tangible form. Solid and simple it stood, beautiful of line and almost perfect of plan —of course, it was not quite perfect or this would not be a true recital, for no house ever is quite what the builder had thought or hoped, but it was as near that as houses ever are built. Strength, simplicity, beauty, taste, comfort, convenience had been economically secured. It was a triumph of house-planning and building. The woman's ideal had materialized. It was her poem, her picture, her work of art. For her that home had infinitely more attraction than had it been built by another, and she merely brought to it to live. The pride and loving interest of creation was hers. It was the child of her own ideal. Well and worthily she rejoiced in the work for it was really hers though she had not placed a brick.

* * *

A farmer stooked the last sheaf at the foot of his harvest field. Glancing back up the slope on which he had been laboring he experienced that intense thrill of satisfaction which comes to the husbandman at the prospect of work well done and rewarded with a pleasing result. It was the crown, not of one year's labor but of many. An average farm he had started with eight or ten years before. Average chances he had, but he was more than an average man. Wrapped up in his character was an innate ambition to excel. To this end he consistently planned, aiming to make each year's achievement a basis for further progress. Not always did he succeed for difficulties and discouragements beset him as they do everyone who undertakes to grapple with the stubborn problems of the field. Floods and drouth and hail came in their turn. Frost injured his corn. A horse died one year. A much lauded new variety of grain he had adopted proved inferior to his old seed stock. Sickness and scarcity of help often upset his plans. New weeds and insects kept him alert. But these things were only to test his steadfastness and develop perseverance. With tenacity of purpose he had held evenly on his way, content to advance surely if somewhat slowly and irregularly toward his goal. In this he had exemplified one prominent trait of character which agriculture imperatively demands.

Now the reward had come. The season had been reasonably propitious. For certain laggards among his neighbors the rains had come too early and the dry weather too soon, but for him who was ready betimes Nature had been not unkind. Careful comparison had decided the best varieties to plant. All his small grains had been fanned three times before sowing and drilled on rich, clean ground, carefully tiled or ditched to provide quick run-off and thus gain a day or more of precious time in spring seeding. The seed corn had been ear-tested and planted on well manured clover sod, carefully plowed and worked down. The corn stood rank even and heavily cobbed. The meadows had filled his mows to overflowing. His alfalfa field was carpeted with a thick mat of the season's second aftermath. Cattle were sleek, teams hard and fit. Swine, sheep and poultry all told of thrift. Fall wheat, already threshed, had turned out nearly forty bushels per acre and here on the sweep of his oat field, the capped stooks loomed thick, tall and dark on the dusk of the evening horizon. It was the best crop of oats he had ever grown, and it looked good for over seventy bushels. Stubble stood stout and continuous in every drill. There was hardly a trace of smut for the seed had been regularly treated with formaldehyde. Not a weed was in evidence for the land had been under a well tilled hoe crop the year before and had grown alfalfa for several years previous to that. So this bumper crop of oats was no mere luck. It was the culmination of years of good farming calculated to produce just such results. "There is considerable chance in farming, but after all," mused the husbandman, "'good management finally outweighs chance."

"That's why I farm," he soliloquized further. "Money is not the main attraction, though we do like to feel there is profit in our work. But the satisfaction I get out of tha crop is far beyond the sense of gain. I believe I would rather raise a crop of grain like that than to win a Waterloo."

It was his Waterloo. The character of a purposeful man had expressed itself in achievement. He had made a poem, and his heart was glad.

Unadilla's New House: By Genevieve

A view of the front and side of the house, showing the rose garden.

The other side of the house. Note the broad stretch of lawn and the sun room over the back porch.

A Place Where Financial and Industrial Interests are Combined with a Consideration for Comfort, Beauty and Higher Life

In line with our series of house-building articles, we have, in this issue, an example of the well-planned country home of Mr. F. L. Green, of Greenwood. This house was built entirely after the ideas of Mr. Green and his wife, and is an illustration of the ideal type of Canadian farm home. The grounds, as well as the house itself, are worth the study of every reader interested in attractive home surroundings.

WHERE all the roads that lead to Greenwood meet at the mill, Unadilla's new house stands back among the trees. It is an unusual house, because through years of planning it was created before the first stone was set, and the trees and shrubs, the gardens and stonework that give it its distinctive setting, came only through the personal touch of the people who live there.

Unadilla is the name of F. L. Green, the Greenwood miller's farm, a stretch of three hundred acres, about half under a thorough system of cultivation and the rest given to forest and woodlot. It is one of the owner's principles to never cut down a tree unless he has to. Perhaps dairying is given precedence over other branches of mixed farming. There are now thirty milch-cows in the herd of eighty pure-bred Jerseys, and the dairy equipment is right up-to-date. The dairy room is cement lined, and built close to the ice-house, and the churn and separator are run by an electric motor and sometimes by a little steam engine which gives an abundant supply of hot water for washing utensils and the daily cleaning up of the room. Another evidence of the dairy industry is seen in the silos, the largest being seventeen-and-a-half feet in diameter and forty-two feet deep. Besides the cattle, the stock includes about one hundred pigs, over twenty dozen Orpingtons, flocks of geese and ducks and turkeys and even a peacock, which brings us back to the house again, by reminding us that the aesthetic possibilities of country life need not be sacrificed for the sake of utility.

The building is square and substantial, with walls of yellow brick and brown shingles. The effect of light and cheerfulness comes from the many grouped windows with their small-paned upper sashes, and the white painted frames and porch trimmings. The roof does not extend over one end of the porch so the sunlight can be allowed to flood right into the house.

THE GENIUS OF THE ARCHITECT.

From the porch the front entrance opens into a wide hall, with a broad, easy stairs and doors opening at either side to the parlor and dining-room, and at the end a door to the kitchen and one to the side porch. The woodwork of the hall is paneled in mahogany and birch, with the side doors of mahogany and panels of beveled glass. The same style of woodwork is used in the parlor and dining-room, the panels are carefully selected, and entire make-up, with white walls and ivory baseboard and window, presents one of the most handsome effects ever secured in indoor finishing. A charming feature of the parlor is the fireplace nook at the end of the room. The front and hearth is built of soft-toned yellow brick, with mahogany bookcases built in on either side. The architectural ingenuity, in using the space walled out to make this nook can be seen in the plan. It is divided into two little closets which open from the hall, one fitted with shelves for a magazine room, the other with a wash bowl and faucet, shelves and hangers for a coat room. Another bookcase is built into the space under the stairs.

The fire place nook at the end of the parlor. The built-in bookcase is one of the most pleasing features of the building.

It is not necessary to go farther than the dining-room to appreciate the builder's combination of cheerfulness, charm and convenience. We have another brick fireplace here, the same ideal arrangement of windows—a broad group of three across the front, a single one at the corner, and a double casement at the end of the room—the same oak floor and mahogany woodwork with walnut and leather furniture, and some valuable antique pieces. The dining-room, pantry and kitchen are in a direct line, so there is no unnecessary traveling in preparing and serving meals. In every detail the pantry is planned for efficiency. The cupboards are deep and high, with the spaces out of convenient reach arranged for storing utensils and

supplies not often used. Only sliding doors are put in, so there is no trouble with open doors getting in the way or knocking things off the counter-shelf. The dumb waiter is a labor saver whose value can scarcely be estimated, and having the sink in here, the workshop atmosphere is taken out of the kitchen, making it a very pleasant dining-room, sometimes. A little closet built flush with the back stairway keeps odd coats, brushes, etc., from finding a place on the kitchen walls.

The land slopes toward the front of the house, so the floor of the summer kitchen is a few feet lower than the ground at the back. This makes it possible to have a basement room for a food cellar just three steps down from the kitchen. When we consider that every time we take a step up, we actually lift the weight of the body, every step that can be saved between the cellar and working part of the house means a great deal to the house worker.

Perhaps the most pleasing feature of the upstairs is the sun-room, built out over the back porch. This is well heated in the winter, and makes a fine conservatory and sewing-room. In the summer screens are substituted for the windows and we have a sleeping porch. The bedrooms, except one, are lighted from two sides, and each has its clothes-room. It is in details like the placing of these closets to save space, in having movable shelves high enough to sweep under for shoes, etc., and in putting a niche in the hall for the old family wardrobe, that the value of real house-planning is shown.

A NOVEL WATER SYSTEM.

The water system here is after an original plan. A cistern draining the water from the roof of the barn supplies the bathroom with soft water. The level of this cistern is sufficiently high that the water is forced to the top of the house by gravity. Should the cistern go dry, water from the mill race which is also above the level of the house, is ready to supply the bath-room and kitchen (not for drinking or cooking, of course, this comes from a spring at the back of the lawn). The two lines of pipe from the race and the cistern, are connected in the cellar, and it is only necessary to open or close a valve to tap whichever pipe is desired. The water for the bathroom is heated from a water front on the range in the summer kitchen, as well as in the main part of the house, so it is not necessary to heat the house in warm weather in order to have hot water in the bath-room.

In providing for heating the same forethought was taken in building the house. A hot water system was installed by which the temperature of the house can be regulated almost to a degree, but the fact was not overlooked that a hot water system makes no provision for ventilation, and that no heating system is proof against accidents. Thimbles have been put in the chimneys so that in case of an emergency stoves could be used and fireplaces in the parlor and dining-room give an efficient system of ventilation, as well as the charm of an open fire.

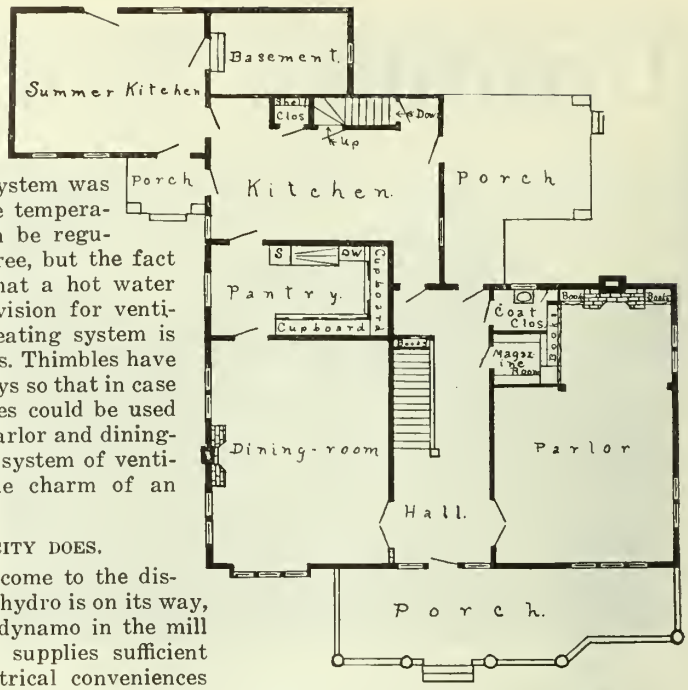
WHAT ELECTRICITY DOES.

Electricity has not come to the district yet, although the hydro is on its way, but Mr. Green has a dynamo in the mill and the water power supplies sufficient current to bring electrical conveniences into the house. Electric light, an electric washer and iron and vacuum cleaner show what it will mean to the farm homes of Ontario when electricity is no longer a dream. Another device for saving labor in the laundry room is at the end of the dairy building where a steam engine is used so it is not difficult to pipe steam into the wash tubs to boil the clothes.

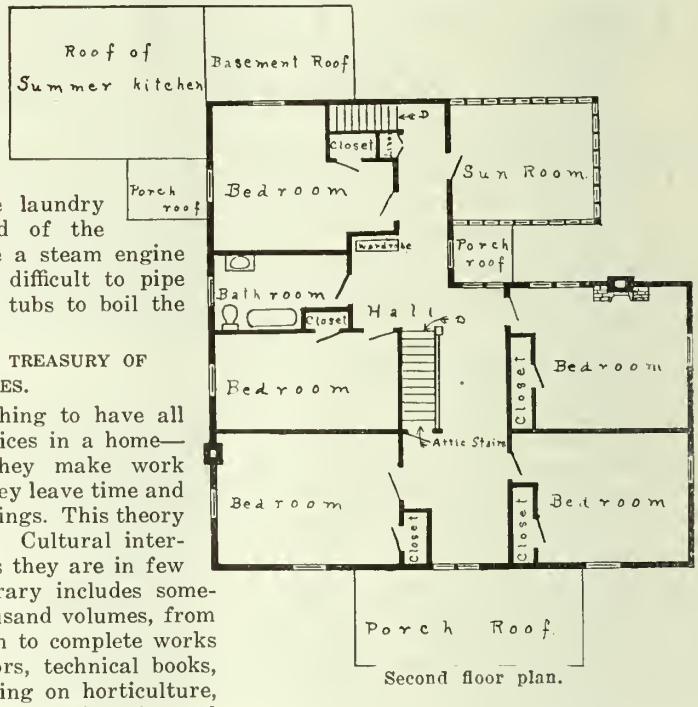
A LIBRARY AND A TREASURY OF ANTIQUES.

It's a wonderful thing to have all these mechanical devices in a home—not only because they make work easier, but because they leave time and the spirit for other things. This theory works out well here. Cultural interests are cultivated as they are in few city homes. The library includes somewhere about one thousand volumes, from the latest good fiction to complete works from standard authors, technical books, especially those bearing on horticulture, a complete Encyclopaedia Britannica and some rare old volumes, worthy of a place in a good museum.

The collection of old things, especially those connected with the family history is one of Mr. Green's hobbies. A watch over two centuries old, old hammered silver, willowware from a set of his grandfather's, and home-made furniture are among his treasured possession's. A home-made china cabinet attached to an old walnut sideboard, a serving table made from an old walnut table, a mahogany chair carved from an old church organ, and a combination writing desk and china cabinet give a unique interest to the dining-room furnishings.



The ground floor plan of F. L. Green's new home in Ontario County.



Second floor plan.

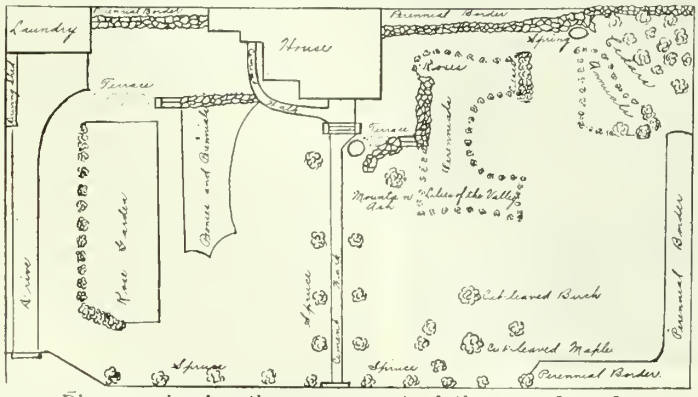


Diagram showing the arrangement of the grounds and gardens.

AN ENTHUSIASTIC HORTICULTURIST.

With all his other interests Mr. Green is an enthusiastic horticulturist, and the home ground is a masterpiece in simple landscape gardening. A perennial border terraced up by a low stone wall runs across the back of the lawn and into a clump of cedars at one end. Another perennial border extends along one side of the lawn with a broad expanse of green sward between this and the house, and beds of perennials and annuals around some groups of shrubbery toward the back. On the other side of the house is a

Continued on Page 70.

His Daddy Called Him Boy: By JUSTUS MILLER

The Real Wealth of Nations where Yuletide Dreams Follow a Hunt in the Big Swamp on Land o'Gold

Because the mystery and glow of Christmastide are deepest in childhood, it will always be a time of memories, of soft-hued dreams and sad awakenings. In this sketch the author of our recent serial, Land o' Gold, goes back to the old farm, hunts all day through old, familiar woods haunts, and at night falls asleep before the fire—and the story tells the rest. The writer's characteristic idealism and imagination are keenly alive here, and the reverie leaves a lot of things to think about.

IT was our first Christmas upon old Land o' Gold after the new home had been built, we were glad to be there, Grace was proud of the old place. . . .

But this first Christmas was not to be spent in the new home. We were to gather under the old roof again. Land o' Gold was bringing forth gold indeed—two homes stood now where only one had been before. That is the true wealth of nations.

The day before Christmas I wandered away with a gun to the "Big Swamp" below the farm where, as a boy, I used to hunt. It was very peaceful there in the gloomy seclusion of the cedars—but how much smaller it seemed! In other days I had crept among the trees in joyful fear, peering into dark thickets where the sun seldom struggled through, half-hoping, half-fearing some beast or savage man might rise up from the tangled growth—beasts and savages that I knew would never pass that way again. Each odor in the swamp, every change of color and aspect meant something to me. Dim memories stirred within me. A vague sense of loss stole over me. For I could enjoy nothing in itself. Old associations carried me backward to things half-remembered and I yearned for I hardly knew what.

The swamp would have been a dismal place to a stranger. But every foot was dear to me. Here I greeted the old basswood as a friend. There I felt a wrench where the tamaracks had been felled. By the Beech Ridge I had shot my first partridge. The weight of years will never crush the memory of that hour. Along that winding cattle path Jake and I had tracked the last white hare shot in the Big Swamp. We are planning a moose trip now, but it will be tame to that day. At the far side where the creek—a great stream to us in those days—gurgles sullenly under elm and cedar we speared suckers in the spring. And here from near the clearing I had taken the Christmas tree each year. Very little trees they were at first and Molly always came to help me. A wraith maiden seemed to rise up before me with her little woolen jacket and sweet eyes. Ah! happy, happy, days!

I had wandered a long way from those days. But my heart was with them yet. My heart would always be with them. Life might bear heavily or lightly upon me: my footsteps might wander far away or remain close to the new home, but my heart would never stray far from the old farm and the old life.

How many of us this Christmas are thinking of those boyhood scenes, with a world of yearning. I wonder! For we can feel the old-time thrill of Christmas only when we turn back to look again through the eyes of the only boy we ever knew—the little lad our mother loved and lost one day. The home farm or the warped old village, the gun and dog of other days or the little girl who first set our pulse a throbbing! Wonderful how they grip our hearts. Remember the horse that used to put his nose over the bars in greeting—the one we drove and fed and loved! Poor fellow, he's dead now. Those aren't tears. Of course not.

Perhaps it was a spirit hovering around me, or it may have been just the joy of getting back, with Grace, to the scene of my early hopes and fears, that stirred my imagination. At any rate I was strongly receptive of impressions all that day. Every rough old maple in the lane recalled some bird's nest I had watched, or a squirrel I had tried, or a fall I had got. The gnarled elms by the roadside reached out friendly arms and the pines by the house gave me welcome. Every rafter in the barns held a memory. The house was pregnant with suggestion.

That is why, I think, a sadness fell upon me that had no place at Christmastide. For Dad was not there. Dear old Daddy who would have been the merriest and the kindliest and the best. And because of all these impressions and associations and regrets a wanderer returned to me that night from the dead. Molly says I only dreamed it. But Boy and I know how it happened. It was sheer magic but it was no dream. We know.

II.

AS glimmering fields and sentinel orchards drew in and lights shone out we gathered around the old fireplace. In stately magnificence a be-spangled Christmas tree stood in a near corner. The air was redolent of fresh cedar. Wee Grace laughed at the flames and stretched out her arms. Little Jake tried to break Christmas crackers with big Jake and not shut his eyes when they exploded. Between while Molly's children and our own prattled of Santa Claus and planned to catch the wily old Saint. And over it all the old folks rejoiced in the lives and loves around them. They had many children now. We were a happy family. Only one chair was empty! I saw my mother's eyes shine wistfully. Such is life.

Soon the sleepy man came and one by one the kiddies were carried away, until only Jake was left with his head pillowed upon Collie. The dog lay with his nose to the fire and both were fast asleep. The others went whispering into the dining-room where dainties had been spread out for the jolly guest, and I was left alone.

I lay down Dickens' Christmas Stories and gazed past the sleeping innocents at the play of flames. Daddy had loved to watch it, as with face lighted ruddily he mused upon the mystery and vastness—and the futility, perhaps—of life. In those days I lay before the fire and with trembling delight visualized robbers' dens and piratical strongholds in flickering shadows of corners and whispered to Molly of ghosts until we crept to bed in a panic at our own fancies.

Ghosts!—I glanced around in awe. The lights flared and died. The flames in the grate burned a ghastly blue. A subtle perfume made the air drowsy. From the shadows of a Christmas tree—but not the tree set up that day—glided a ghost dog. His coat was black and long and his fangs gleamed. Noiselessly as a wisp of smoke the wraith came to me and lay where Collie and Jake had been a moment before. I rubbed my eyes—but they had vanished like a waking dream.

The dog lay at my feet but he never saw me. Once he would have followed me through fire: for it was Watch whom I had reared from a puppy, and who had hunted each foot of the Big Swamp with me. One day he had gone away to die alone. I had hunted every wood and swamp but he could not be found. In life he had been faithful and in death brave. And now he could not see me.

There on the old sofa lay another ghost. Why that sofa had been burned years before and Dusty, the bull-terrier, had died the year I left for college. Dusty, too, had hunted with me and had loved me—and saw me now not at all,

Ghosts, ghosts—they were all about me! Clothes I had worn once, furniture Molly had relegated to the scrap heap, my old gun over the fireplace. Through the open door I caught a glimpse of the Mater in the kitchen. She was younger now.

A shock-haired boy came from nowhere. His feet were large but they made no sound. He threw a weather-beaten cap upon the lounge.

"Hello Dust! What yuh dreamin' about—" His voice was the thin echo of a voice.

The ghost dog opened one eye, dug more deeply between the springs and settled to sleep again.

The lad opened the neck of his crazy woolen shirt, sat down by Watch and gazed into the fire.

"You're not Jimmy, are you," I asked, fearfully.

"Yes, I'm Jimmy: only Dad calls me Boy."

"Where've you been all these years Boy," I questioned very softly.

"I've—I've been—I guess I've been lost haven't I." The lad looked wistfully into my eyes.

"Yes! Yes! I know—poor old Boy! I've been so lonely for you lately, too."

"I've been powerful lonely too. So've Watch and Dusty. We were out in the Big Swamp to-day."

"But I didn't see you," I doubted. "How could you be there? Why boy you've all been dead for years. You are ghosts. I wonder if I'm a ghost too."

"There aren't any ghosts like what we used to think about. We aren't that kind. Then again everything is a ghost. But you couldn't see us to-day. You'll only see us for a long time yet at night. But sometime we'll hunt together in the swamp again."

I couldn't understand him. But he only nodded to the fire and stroked a wind-reddened face.

"We had great sport," I smiled, "the day Jake started up all the birds on one side and they flew right over us on the other. Jake used to think he could shoot too. He always claimed we must have trapped all those partridge or found them or something."

"But that wasn't as funny as the Sunday we all stole away to the swimmin' hole," chuckled the boy, "an' Brown's calves eat up most a' Briggam Young's shirt an' he had a' wait until after dark to go home for fear his mother'd lick him. And then we stole a settin' hen to cook in the woods and Jake got it all picked an' we found there wasn't a match among the whole lot of us. An' then Dusty eat up all the biscuits Nigger Bolton had swiped, while we was trying to start a fire rubbin' sticks."

"But that wasn't anything to the morning that Dad tried to feed that white-faced calf that wouldn' drink," I ventured. "She bunted skim milk all over him and down his boot-tops and then he tripped over the pail and fell on top of the calf. Jake laughed so hard he fell off the hog fence on Sally Ann and her little pigs and nearly got eaten up. We had to hide in the woods across the road until noon."

The boy stirred with a sigh. "I've never been able to quite figure out some things," he said. "Remember the time we decided to play Indian in the bush and fixed up a bed in the sugar shanty. A coon started to holler and we got scared and run home."

"I'll never forget how we stubbed our toe on the oak stump by the fence," I ejaculated.

"That's what I'm comin' at. I often wondered why the Mater cried that night when she left us after doin' up our foot and tuckin' us into bed. Seems like I couldn't ever understand her very well."

"Neither can I now, Boy. Sons have been trying to understand mothers for six thousand years and not one has ever done it. Maybe she was crying to think that we wouldn't be her little boy much longer to have our feet done up."

"But we were a lot of bother. She always was doin' things for us and we never did much for her. Remember how she always gave us most of her share of the pie? Suppose we ever paid her back?"

"We never could do that. She didn't want us to. Perhaps, she cried that night because pretty soon she couldn't sacrifice herself for us in those ways."

"I don't know," replied the lad doubtfully. "I wish I could be sure."

He dreamed into the fire awhile. Then suddenly, "How did it all come out."

"How did what come out Boy. You are talking widely."

"Why our dreams." His eyes were eager.

"But we had so many dreams! What do you mean?"

"Don't you remember how we used to pretend?", whispered the lad as though ghosts around us would hear. "Remember how we sat in the big barn window by the hay-rope and pretended we were Napoleon leadin' armies to conqueror the world. Sometimes we'd be goin' on and on through the pure woods until we followed the sun around and found new oceans and continents for Canada. Then we 'most made up our mind to be a great doctor and discover cures for every disease there was. But mostly we wanted to own all the land from the gravel road to the middle town, live and write poems like Bobby Burns.

"What happened anyway," he concluded anxiously, "You see I've kinda got out of touch with everything that happened lately."

"Ah Boy," I answered sadly and ashamed, "those days have faded like the summer's roses and with them the hope of great things has faded too. We dreamed and dreamed, but life is no dream. The world isn't like what we thought it was. It is a battlefield where no one gives something for nothing. Dad and the Mater and Molly were the only ones who ever did that. They were all against us so we could never do the great things. We were too lost in great dreams to pursue the little things that make great men.

"I don't know about the dreams," returned Boy sympathetically. "You see I'm a sort of a dream myself. Yet I'm real just the same. Maybe our dreams are real too. I've had lots of time to wonder about things since I left you. Heaven is a dream but it's real. How do you know that the world's real?"

"I don't know, Boy. Sometimes I've thought it wasn't. Sometimes I've seemed to feel a spirit that was the real part of things—seemed to feel that what we see are only the shadows of something we cannot comprehend. Maybe you are right. Perhaps dreams are the finer parts of us gilded by a true light. If you could ever grow any older, Boy, you might not believe in heaven at all. Perhaps it may just be all the dreams of yesterday about to-morrow coming true to-day."

But I had gone beyond the lad. He nodded drowsily as he smoothed Watchs' ears.

"I guess it's time to turn in," he remarked presently.

"But you won't leave me again will you, Boy," I cried, "after all the years you've been away?"

"No! I'll never leave you again. In the quiet of the night I'll come back and some day the dogs will know you. Then I'll come more often. After that we'll come in the day time. Then some afternoon you'll go with us to the 'ole swimmin' hole. An' then Dad and the Mater and Molly will come back and the old farm will be like it was before you left. Jake'll come too an' Briggam Young an' Nigger Bolton an' all the others and we'll play all day long and maybe we'll get through the pine woods to the new ocean we used to want to discover."

"Ah Boy! I know now," I whispered softly. "The sun will hang very low in the West all day long then. The shadows will slant away to the eastern hills each morning. The wheel of time will have stopped and turned backward, for each day will be yesterday happy with the promise of to-morrow. I shall be a feeble old man then. They will say I am a child again—but they'll never know the happy, happy days we'll have. Every dream will be real, and I think we'll reach the great new ocean.

"I am glad——"

But I was talking to the fire and the ghostly days. From the turn in the stairway the lad had paused a moment to wave a hand. Suddenly a murmuring sound a great way off disturbed the silent heaviness of the air. Little golden sparks danced above the weird blue flames. With grinning jaws and reddened eyes the dogs rushed towards the fire and disappeared. The ghostly relics around me wavered and vanished like dispersing mists. An unseen hand clutched my shoulder.

III.

"WAKE up, Jimmy! I believe you'd sleep all night." It was Molly's voice in my ear. Molly's hand was upon my shoulder.

I shielded my eyes in the new light. "The ghost dogs," I whispered peering into the flames. But only Collie snored with his nose to the fire. Jake had been taken away. The new Christmas tree was heavy with gifts and Santa laughed at me with venerable beard. I looked at a tear glistening on my hand. "The boy didn't see, I hope," I muttered. He would be ashamed."

"Well I declare he isn't awake yet," said Molly.

"It is Christmas morning. Listen to the village church bells ring. A merry, merry Christmas," cried Grace.

"A merry, merry Christmas indeed I nodded to a little girl in a woollen jacket smiling with sweet eyes from the flames." The merriest Christmas I have ever known. The Magi have brought me a priceless gift. Now each Christmas shall come more pleasantly, dreams will make it more happy. My dearest friend has returned from a long journey."

"You talk in riddles," said Molly, in perplexity.

But Grace leaned over my chair, a deep understanding in her eyes.

"Has the spirit of home wrought miracles already," she whispered. "Has the little boy your mother loved come back to her again."

I smiled at the turn in the stairway.

"His name is Jimmy, but Daddy calls him Boy."

Beef Cattle Futures: By James E. Poole

Why Cattle Prices Must Continue Upward in Canada in the Near Future

Perhaps there is no better authority on the continent in matters of livestock than the author of this article. He is editor of a daily livestock paper, and a valuable contributor to another breeder's paper in Chicago. That he is in close touch with Canadian conditions will be apparent from his words. Moreover, his story is an intensely gripping one to everyone who handles cattle, hogs and sheep. Farmer's Magazine readers are thus kept in touch with the really big things in agriculture by experts in every issue. In fact, every issue is a special number.—EDITOR.

A STOCK yard axiom is that few know whence the cattle come. Even in trade circles ignorance concerning livestock supply is dense. Indifference concerning the future is equally pronounced. This attitude was illustrated by a commission man who when asked what a car of cattle consigned to him looked like, replied: "They look like $15 a car to me," that sum representing his selling charge. The packer has shown no solicitude regarding his supply of raw material while the transportation interest, by refusing to treat cattle, hogs and sheep as perishable property has pursued a tonnage repression policy. In short it has been customary to assume that from somewhere on this North American continent would come an adequate annual supply of beef, pork and mutton. Season after season of glutted stock yards has been regarded as evidence of abundant production, whereas it spelled liquidation in characters so legible that any other interpretation was wilful misconstruction. And now that the bare spots are being uncovered, and cost of meats has reached levels prohibitory to many consumers, belated alarm is being sounded. Packers and distributors in convention assembled adopt sonorously phrased resolutions suggesting chimerical relief measures. Editorial denunciation for neglect of opportunity, to embrace the opportunity and create wealth is hurled at the grower while the scarcity forecaster, long derided, is now making good. Statistical proof is no longer necessary, but the fact that the commercial supply of cattle at the principal primary markets of the United States has decreased 1½ million head, approximately, during the past eight years, despite large accessions from Canada and Mexico, is eloquent confirmation of shortage. Hog supply during the same period shows a shrinkage of about 3 million head. Sheep have increased, but this has represented reduction of both native and western flocks, until what has happened to beef supply is about to be repeated in the case of mutton and serious dearth of that product will be the logical result of ten years of liquidation.

Reiteration of past performance will, however, be both wearisome and fruitless. What concerns the producer at this crisis, and the term is used advisedly, is whether or not the growing and maturing of domestic food animals is to continue profitable. The carriers ought to be interested in prospective live stock tonnage, the packer in a supply of raw material, without which his plant will become a liability rather than an asset, and the consumer in access to beef, pork and mutton at reasonable prices. And the assertion may be made that the era of cheap meats is a closed chapter of history.

Of the practically unlimited capacity of North America for producing cattle, hogs and sheep no demonstration will be necessary. The vast herds and flocks of the halcyon days of the industry have either been depleted or effaced from the landscape, but Dame Nature is still on the job producing the same wealth of feed with each recurring season. Uninformed writers prattle about conversion of ranches into farms ignoring the fact that over a large part of the United States and Canada only live stock husbandry is practical or remunerative. Under new conditions such areas as Alberta or Montana will be capable of producing more cattle and sheep in a single year than went to market in half a decade when they were mere community ranges. Isaac M. Hodgkinson, one of England's foremost live stock authorities, traversed the major part of both countries last year and declared it to be a land of illimitable but unscratched possibilities. From the Atlantic to the Pacific and the Gulf of Mexico as far as grass grows in the direction of the Arctic circle the ruminants thrive and wherever a crop of grain can be raised the hog can be utilized for its conversion into portable form. Nor is the consumptive capacity of the population of this vast region to be questioned. It is the melting pot wherein is being

A wonderful herd of Shorthorn cows on the Experiment Farm at Brandon, Manitoba. The traveller over the prairies always comments upon the number of good cattle he sees. It would look as if all the good breeding stock had been brought up by these diplomatic farmers.

The new improvised stockyards at Regina, where the people are waking up fast to the importance of livestock farming and marketing.

blended a composite race, the carnivorous European progenitors of which have transmitted an unappeasable desire for meat foods. "Eat less meat" is the advice of the theorist, but the stinted public ever cries for more. The appeal of the vegetarian to adopt his diet falls on deaf ears.

A short year ago free trade was exploited by theorists in the United States as a panacea for meat shortage. Canada and Mexico, when the tariff bars were thrown down, were to furnish an abundance of cattle, hogs and sheep. Fleets of refrigeration craft, in imagination, conveyed excess beef and mutton production from Australia and South America to northern markets, but nothing of the kind has happened and the problem is still apparently unsolved. But that it is insoluble is an untenable theory. If the rapidly increasing population of the United States and Canada is to have an adequate supply of meats that supply must be produced in North America. That it can be done is demonstrable. That there will be a market for the product does not need assertion. Within a few years the two countries will have a population of 150 million, practically all meat eaters. Those whose foresight prompted them to resist the liquidation impulse are now reaping a rich reward. Most of the profit in live stock production is now going into the pocket of the breeder and will for many years to come.

Where will the cattle supply of the future be produced? Washington oracles have been exploiting the South, the cotton belt to be exact. By eradicating the tick it is contended that these states will become extensive cattle growers. But outside Texas no commercial cattle industry exists to-day and it is improbable that one will be developed while the present generation is here. A nomadic negro tenantry is the curse of the whole region lying south of the Ohio River and for political reasons it is desirable to keep the colored brother moving. Once permanently located, a condition essential to live stock production, he demands the right to vote, and educational facilities. Tick eradication will be a task requiring many years, consequently Texas, which includes New Mexico and Arizona in a cattle sense is the only prospective source of increased beef supply in the southern half of the United States. This natural breeding ground, where the industry is being rehabilitated in response to remunerative prices, is the cattle nursery of the United States. Under new conditions made possible by the dipping vat its increase may be marketed annually, whereas but recently its cattle did not have a market outlet until two to four years old. The new system makes possible a vast increase in cow herds, the process of accumulating being already well under way. Hereafter theTexas crop will be marketed largely as calves and yearlings, going either to corn belt feeders or grazers at those ages, thereby vastly increasing beef tonnage.

Outside the Southwestern breeding ground the cattle business has in recent years gone on a steer basis. As the steer does not reproduce itself replenishing pastures and feed lots is annually becoming a more difficult operation, to which is due in a large measure the diminishing supply of beef. But one state in the Union, Colorado, has maintained its breeding herds. Its mountainous area is producing a crop of superb beef calves the scale and excellent quality of which demonstrates the beef growing capacity of the entire backbone of the continent with its abundance of water and succulent grasses. Wherever a haystack can be erected during the summer, making winter care possible, a cowherd will pay more substantial returns than if the investment were in the most lucrative bank stock on the security list. And all over the great plains region from Texas as far north in Canada as top seed plants, such as Kafir, and small grains grow, livestock will gain a permanent footing. In the semi-arid region farming, as it is carried on in sections of abundant rainfall, is admittedly a chimera. Here the only "cinch" is the cow and the sheep. On the succulent grasses of the elevated mountain areas the latter thrive, while the plains are adapted to beef raising. Montana, Wyoming, the Dakotas west of the Missouri River, western Kansas and Nebraska, Utah, Idaho and Nevada, outside a few spots, almost inconspicuous on the map, where irrigation is practicable were designed by nature for pastoral purposes and that agency will frustrate development effort on any other basis.

How the ruminants thrive in this Western country, which was the natural habitat of the bison, even under climatic handicaps and when a large percentage of the increase was devoured by predatory animals, is not comprehended. An example afforded by the operations of one of the lesser Montana cattle outfits will be of interest. The figures were taken from the books of the Weyth-Brown concern of Miles City, which started in 1886 with 1,196 cattle. In twelve years it branded 11,934 calves, making the number herded during that period 13,130 head. Of these only 7,685 were marketed, most of the rest either succumbing to rigorous winters, or being devoured by wolves as normal mortality was small. Under the present winter care system most of that mortality would have been averted.

Another school of theorists contends that resumption of commercial cattle breeding in the corn belt states will result in large accessions to beef supply, but this is a fallacy. The corn belt cattleman is essentially a feeder. He went out of the breeding business when trans-Missouri grass became available for cattle raising and he is out to stay. Cattle breeding in the corn belt will be limited to pedigree stock and a few scattered herds of grades maintained by makers of baby beef who, to reach maximum results, must raise their own calves. The average farmer in Iowa, Illinois, Missouri and adjoining states, not located in the milk-producing area tributary to the cities is a corn raiser and when he cannot get thin cattle to feed at a price that promises a good price for his grain he will haul it to the elevator. When corn had a cash value of only 20 cents per bushel or less he had no alternative but to convert it into beef, pork or mutton, but no such necessity exists now. Each year fiinds a nomadic tenantry cultivating a larger area of the corn belt and the man who moves every spring is in most instances a grain seller. Farm owners are animated solely by a desire to get every possible cent of revenue and only in rare instances encourage tenants to even feed livestock, much less breed cattle. The result is steadily deteriorating fertility, but the tenant has the alternative of moving on and owners have scant respect for the rights of posterity. Under such conditions breeding cattle in the corn belt except in isolated spots is improbable. This year a single load of Shorthorn yearlings that realized $11 per cwt. on the Chicago market, represented the sole output of commercial cattle bred in Sangamon county, Ill., a region noted for its breeding herds as recently as ten years ago. Its rich blue grass pastures have been converted into cornfields meanwhile and even a herd of steers is now a novelty. Cattle breeding in the corn belt is a dream of the iridescent variety.

Outside the cornbelt proper in the United States is a region corresponding in natural resources and climate to On-

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Things Your Mother Did Without

A Study of Some Simple Vital Processes in the Background of Life that are Never Noticed Until they Stop

By ETHEL M. CHAPMAN

Christmas is a good time to stop and take a serious look into the background of our lives, to think of the people who, unobtrusively, and maybe unconsciously, are making possible the things that mean most to us. When we wake up to this, the mothers of the world will be accorded an honor that no class of people have yet known, but there should be a fuller realization now. In this article we have a revelation of some of the sacrifices made by a great many farm mothers, and some ways of relieving them.

AT Christmas time the whole world is either at home or homesick. You may not know this until you have been one of the homesick thousands among the crowds who don't care, and could never understand why a man should be beside himself because of the memory of a grey-haired woman standing at the door of a farm-house among the hills; or how the years in the fields could grip and direct a boy's life so that he would always look back to them from the hard places.

But the man knows that the ideals, the ambitions, the perseverance, the endurance that are making his life, all find their propelling force in the years back of the town lights. The rising in the early dark of winter mornings to light the fires, the shoveling paths through frozen drifts to the stable to care for the stock, the hewing timber from the old wood-lot to build a barn, the work on the land in the soft spring days, and the wonder at the eternal miracle of life and growth, the press of harvest time, the struggles with blight and weather, had prepared him to meet the world when he turned his face toward the West one sunrise years ago. And he generally knows—sometime—that it was his mother, the woman who stood at the door, watching bravely until he was out of sight, who has been the unconscious inspiration of it all. Without personal ambition she had let him find his work and then had helped him to reach it. Without words she had understood and helped him through the years when life was strange and no one, not even his father, seemed to understand. Then when it came time for him, the last of her sons to leave her, and take up his work in the world, she had not hinted at the thanklessness of raising a family only to finish the journey alone. With a pride in her eyes she had watched him go, then had gone back to her work. Her work, the simple, vital processes in the background that are never noticed until they stop—it would make an interesting study for the man who cares.

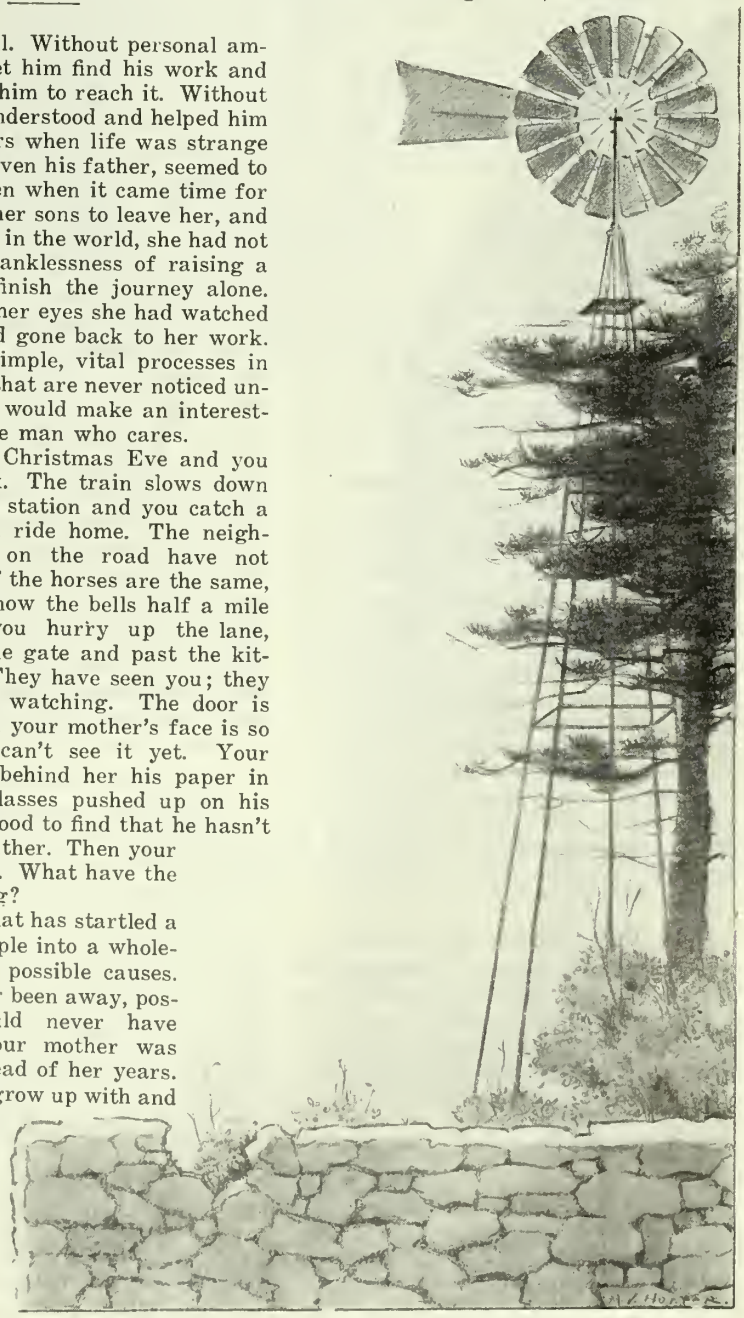
Who could think of swinging a washing machine half a day every week with a windmill or water-power like this in reach.

Suppose it is Christmas Eve and you are coming back. The train slows down at the little flag station and you catch a wood sleigh and ride home. The neighbors you meet on the road have not changed, most of the horses are the same, generally you know the bells half a mile away. Then you hurry up the lane, through the little gate and past the kitchen window. They have seen you; they must have been watching. The door is pushed open and your mother's face is so close that you can't see it yet. Your father is right behind her his paper in his hand, his glasses pushed up on his forehead; it is good to find that he hasn't changed much either. Then your mother looks up. What have the years been doing?

It's a shock that has startled a great many people into a wholesome review of possible causes. If you had never been away, possibly you would never have noticed that your mother was wearing out ahead of her years. Things that we grow up with and do not see, stand out glaringly after an absence. That's why it is sometimes good for us to go away for a while before we settle down at home.

The next morning you get up early to build the fire. The temperature of the rooms upstairs is somewhere about freezing, practically the same as it is out doors. In the kitchen it is a few degrees warmer from the smothered coal fire in the range. You turn on the draughts and put on fresh coal, wondering what it must mean to get an early breakfast for the hired men in that atmosphere every morning. *Then you hurry out to the barn to get warm.*

When you come back after the chores are done, the temperature has risen, if there is no wind and little frost outside. Your mother is making pan-cakes and fairly buzzing around. To-day the children are coming home; it is all she could



ask for. With unmistakable pride and eagerness for approval she shows you the stuffed turkey which was the best of her flock this year, the rows of frozen mince pies that she made early in the week in order to have time for everything, the pudding tied in its cloth and the Christmas cake of which she is afraid the frosting isn't just as creamy as it was last year, though she had taken extra pains with it. A few years ago you might have smiled at this detailed account. You could smile now, too, but there is something choking you just the same,—the thought of the perfect happiness in service, the desire only to please; and so often it has all just been taken for granted.

Perhaps the only cloud over the house that day is that your only sister can't come home. After the married brothers and their families have gone back to town in the early dusk of the short Christmas afternoon, when that strange, lonesome feeling of reaction begins to creep in, your mother speaks of this again. "But I know it's better for Mary not to try to bring the baby at this time of the year," she says. "Their house is steam-heated and she has every convenience right at her hand. It wouldn't be safe for them to come out to the country now."

That is very significant. If the cold house isn't safe for visitors, isn't it doing its work just as surely on those who live there? Perhaps you thought of that when you came down to the cold kitchen in the morning, or when you saw your mother heat an iron to take to bed with her, remarking apologetically that she guessed she was spoiling herself since she was getting old. You think of it again remembering an occasional painful twitch in her face and the smiling explanation, "Just a touch of rheumatism."

So you demand somewhat impatiently, "Why can't we have steam heat put in here? Jim's salary is about twelve hundred and he has their living expenses out of that. The farm here clears fifteen hundred anyway, and you've been freezing for forty-five winters. When we had a wood cook stove in the kitchen and a box stove in the parlor, if company drove up the lane you had to snatch up a fire-shovelful of coals and light the parlor fire. Then it would be an hour before the room would be habitable. Father has the most up-to-date quarters for the stock at the barn. It's time some of the improvements came in here."

THE SNAP IN MOTHER'S EYES.

But you have gone a little too far. There is a snap in your mother's eyes that doesn't come there often.

"I guess there aren't many women that have had a happier forty-five years than I have, here," she says," nor a kinder man than your father."

It is the eternal woman and you admire it.

"Sure he's kind," you reply, properly squelched. "It isn't that he would mind spending the money for conveniences in the house, but he doesn't think they're possible. I believe he would let me put a furnace in, if I could convince him that it would work. But go on and tell me about the baby." That's a safe subject anyway, whether you are much interested or not. Likely she will tell you something like this.

"I was there for a week when he was born. I would have liked to have stayed longer, but the men were coming to fill the silo and the girl we had out from town for the time was used to having the water in the house and all that, and she wasn't strong enough to get along alone. But I didnt feel at all uneasy leaving Mary. She had a good trained nurse, and her maid was going to stay for a couple of months."

THE OLDEST SACRIFICE.

After a while she may add, "He's a good man, James. Somehow he couldn't get over the wonder of being a father. One day when the soldiers were leaving, and everyone was so proud of them, he said, 'I suppose the nation will never know what it means to each of these men to sail right out to meet quick death or untold agonies that are as likely as not to come his way, but I've just begun to realize that the courage and sacrifice aren't just beginning. For every one of them some woman went right down to the gates of death, and when she came back with a child in her arms, she never lived for herself afterwards.'"

It has never occurred to your mother that this touches herself in anyway, but you find yourself wondering what substitutes there were for trained nurses and maids when her children were born. You know that when there were children in the neighbors' houses the women living near went on in half-day shifts for a week, and after that you would find the mother herself back at the wash-tub again. When the little colts arrived, their mothers were turned out to pasture for a while, but a rest was not to be thought of for the baby's mother, because it was impossible to get help in the house. That was true, generally; at least it was hard to get efficient help. Girls would go to the city on starvation wages rather than work out on the farm; it was too hard. But mechanical equipment and conveniences could have been put into the houses so that help would not be necessary.

THE HOUSE AND IT'S MACHINERY.

On wash day you come in from the barn to find the boiler on the stove in the back kitchen, and an array of clothes ready for operation that would make a Chinese laundry look prosperous. It is just the ordinary weekly collection, but of course there are two hired men as well as the family to wash for. You are glad to see a washing machine in the corner, but when you come out to run it, you find your mother just ready to use the board. She explains that the machine is too hard to run. Your father bought it at a sale, and there must be something wrong with it.

But you are going to help wash and you think you can get along better with a poor machine than with the tub, so you fill it up and go to work. There is really nothing wrong with the machine; that is, it is not different from any other of the same make and age, but it gives you some new ideas. "I wonder," you think, "how it is that when a man installs a washing machine without trying it, he thinks he has disposed of the laundry industry in his house for all time?" Before the first hour is up you are casting certain speculative glances at the windmill. Of couse, you explain that personally you don't mind the exercise, though you know this is a brute of a machine, but you wouldn't spend half a day every week swinging the easiest hand-washer that ever was made, with a water power on the farm like there is here.

THE "LUKE-WARM HOT AIR" IDEA.

So you do a lot of figuring, and then take your plans to your father. We will suppose he belongs to the careful, prosperous, conservative class of farmers who have never taken a working interest in farm mechanics, and who do not know that there is such a science connected with the farm house. He listens until you have finished, then he says.

"It's no use. Sometimes the windmill won't even pump enough water to the barn. We can always manage that, if we have to pump it ourselves or drive the cattle to the creek; but you get a tank in a cellar and a bathroom upstairs, and a water front on the stove, and every concern in the house depending on water to run it,—then let the windmill stop and see where you'd be. I wouldn't mind the cost, anywhere within reason; we could afford it now, but I don't take such a long chance as that with the wind.

"As for a furnace, for myself I like a fire where I can see it. If the house *is* cold upstairs there's always a corner beside the stove that you can make as hot as you like. If I could have a good old-fashioned fireplace now in my old days instead of any of this luke-warm hot-air or steam-heat, I wouldn't mind spending a couple of hundred dollars for it. But if your mother wants it, go ahead and put in a furnace."

Your mother isn't sure whether she wants a furnace or not. She doesn't doubt that it will be satisfactory if you say it will, but $120 seems a lot of money to spend in the house. It looks a little different when you remind her that four of the twenty young cattle ready to be sold will pay for it, and that it will not cost more than the new cement pig pen with its feed-cooker and separate sleeping apartments. When it is completely installed and a comfortable living temperature can be had even in the spare bed room, she feels as though she has been transferred to a new world. If you are so fortunate as to have an extra chimney going through the living room, a brick fireplace would cost very little. A tile front and grate would cost about $18, and a carpenter would put in the wooden frame and mantel shelf for about $10. If you can do the work yourself, and use brick instead of the tile front, the only expense will be the new brick, the grate, and a piece of lumber for the mantel.

PUMPING POWER AND WATER SYSTEMS.

The water system presents a more difficult problem, however. You know that with a large enough storage tank, and a

windmill properly constructed, you could safely depend on a constant water supply for the house, even if the wind should fail to blow for a few days, but knowing the record of the old windmill you wouldn't care to take any chances with it, and you are a little afraid of the cost of a complete new outfit. To ensure a safe quantity of water, the tank would have to be so large that a pneumatic tank in the cellar would be impossible, and as there is no third floor in the house you couldn't have an attic tank, so a tower tank and frost proofing would be necessary. You know that the best all-round pumping power would be a gasoline engine, which could be made to do a lot of the work at the barn as well, but your father isn't ready for a gasoline engine yet. If you live among the hills, the cheapest pumping system is still available. A hydraulic ram can be put in for $50 or less (not including the pipe) which will pump water to a pneumatic tank in the cellar, and the overflow could be used to run a water motor for the washing machine or the churn.

The door is pushed open and your mother's face is so close that you can't see it yet.

The cost of a complete water system is not prohibitive on any fairly prosperous farm. Consider the following illustration from an American farm home. There is a pneumatic tank eight feet long and thirty inches in diameter, in the cellar, and a smaller tank of sixty-six gallons' capacity connected by a hand force pump with the rain-water cistern. Three or four minutes' pumping with the hand pump every day gives a good pressure on the cistern water. The soft water tank supplies a thirty gallon hot water boiler which is connected with a hot water coil in the furnace, and with a gasoline heater in the cellar for summer use. The plumbing includes a sink in the kitchen and complete bath-room fixtures. Three pipes with faucets for cold well water, cold cistern water, and hot cistern water, run to the bath room and to the laundry. The cost of the entire plumbing, including connections to the windmill, and to the rain water cistern, the hand pump for the cistern, the steel tanks, and septic tank, but not including the windmill, was $300. Complete water systems including bath-tub, sink, pipes, pressure tank and all fixtures, (without labor), have been installed for $125.

By the time you have finished this you may have made up your mind that farm life and farming have new possibilities—that a country home can be made vastly more livable and attractive than one in the city at the same expense and that agriculture because it involves every known science, is a profession just a little broader than any other work in which you have had experience. But if you decide to stay on the farm, some evening you may find the natural desire for company too strong to be silenced by the charm of the blazing logs or the snapping frost outside or the quiet ticking of knitting needles. Reading the creations of some one who can almost people your hermitage with imaginary characters won't do either. You want life, real, young life. You know why there are no boys in the neighborhood; you left yourself. So far as you are personally concerned, however, you could get along without them. But just ask your mother why the girls left. Ask her why she wanted Mary to go to teach in the city instead of staying at home when she finished high school. She may tell you something like this:

"I knew that if Mary stayed at home, she would likely marry a farmer, and I

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Canada After the War: By W. L. Smith

A thoughtful article written by a well-known journalist-farmer will form most entertaining speculation to every reader throughout Canada. An article from the pen of this writer will appear shortly on the value of intensive farming in one of the big busy spots of the Dominion. It will contain valuable hints for the man who is out to make increased returns or of finding out new ways of business. Undoubtedly there will be a few big industrial changes after the war.—Editor.

WHAT will be the effect of the war on Canada's industrial position? War is the negation of industry and commerce. The latter are creative; the former is destructive. War between great nations carries with it overwhelming injury to the power that is beaten in the struggle; it is but little less injurious to the one that wins. War causes more or less of injury even to neutral nations because the whole world has in the last fifty, and more particularly in the last twenty-five years, been so bound together in commercial bonds that disturbance in any one quarter, even in Mexico, injuriously affects all civilized countries. The present war, involving as it does almost the whole of Europe, and with the field of operations extending to Asia and Africa, is bound to be especially damaging in its effects.

Take the case of the two combatant nations, in which we in Canada are more particularly interested, Britain and Germany, for example. Before the war Germany was exporting to Great Britain something like $280,000,000 worth of goods annually. Britain was exporting to Germany some $200,000,000 worth of her products. This interchange must have been mutually profitable, else it would not have gone on. In many cases the goods Britain bought in Germany were in the form of partially finished products for use in her own factories. That trade has been wholly stopped by the present war. Even if both nations could come out

of the conflict with resources unimpaired it would take years to restore the lines of commerce thus broken up. It should not require any argument to sustain the statement that this breaking of commercial intercourse must be an injury to both nations.

What has been said of Britain and Germany holds in a measure of Austria, Russia, France, Servia, Montenegro, and in greater measure in the case of Belgium. All other nations are having their trade disorganized by war. It will take years to recover from that disorganization even aside from any impoverishment that may take place. But there will be impoverishment; there will be a curtailment in producing power and consequently in consumptive power of the nations involved. That will be damaging to all these nations in a commercial way; it will be damaging to all nations that have commerce with them and that means the whole commercial world, including Canada.

For the present there may be a stimulus in certain lines of trade in Canada due to the spending of borrowed millions, which will have to be paid back with interest later on, but in the end the effect must be a check to our trade with other countries now engaged in war, because their purchasing power will be lessened by the enormous drain on resources due to war.

Before that fateful day in August last something like $14,000,000 worth of Canadian products were being yearly sold in Germany. It will be a long time before that figure is again reached. Before the war we were selling about $130,000,000 worth of exports in the United Kingdom. The impoverishing effect of the war on Britain is bound to curtail that trade for some time to come. Our trade with Russia, France and Austria, such as it is, will also suffer.

But, after all, Canada, stands to suffer less by the great conflict than any other participant in the struggle. Our geographical position ensures us against fighting being carried into our territory. Our geographical position carries with it another great advantage, proximity to the American market.

The United States, and more particularly that part of the United States immediately adjacent to the oldest provinces of Canada, provides the largest demand in the world for foodstuffs such as Ontario, Quebec and the Maritime Provinces are so well-fitted to produce. The Breeders' Gazette of Chicago, estimated some time since that 60 per cent. of the foodstuffs consumed in the States lying east of the Mississippi valley are brought from outside that territory. When it is remembered that in some of the States in the block named the urban population represents from 75 to 95 per cent. of the whole the statement can well be believed. The nearest outside source for the supply of this imported food is in Eastern Canada. It is a shorter haul to Buffalo, Philadelphia and New York from Ontario and Quebec than it is from Kansas. It is a very much shorter haul from here than from Australia or Argentina. We have the advantage of position.

It is not only food which the States lying immediately to the south of us have to buy from outside their territory. Other of our products are required there as well. In the eight months ending with August, Canada sold in the United States not only four million dollars worth of cattle, but 4½ million dollars worth of copper as well. We sold in the same market five million dollars worth of hides and 7½ million dollars worth of printing paper. We sold 7½ million dollars worth of flax seed and 10½ millions in lumber and other forest products. Altogether we sold $105,500,000 worth of goods in the United States in the first eight months of the present calendar year.

Nor are these sales likely to be curtailed. Rather are they likely to increase. One reason for expecting an increase is found in the fact that the United States will suffer less from the war than will any other nation. Indeed, despite the fact that the general effect of war is as already stated, injurious, the United States will probably be one exception to the general rule. The Republic may actually profit by the present conflict. The trade which European countries now at war are sacrificing in Asia, in South America and in Africa will go largely to the United States. This will increase the purchasing power of the latter and so increase the demand in that country for goods produced in Canada.

A still further stimulus to Canada's American trade will be created by the tariff policy recently adopted by the United States. The United States, once perhaps the most strongly protectionist country in the world, has of late turned strongly in the opposite direction. In the eight months ending with August, 1912, 46.70 per cent. of the goods imported into the United States, were subject to duty. In the same period this year only 38.76 per cent. of the imports paid customs taxation. In the first period the customs taxes imposed amounted to 18.41 per cent. of the value of the imports; in the second the customs taxation amounted to only 13.86 per cent. of the value of the imports. Much of the reduction is represented by the abolition of the tariff on meats and meat animals and the reduction of the tariff on other farm products. Thus the artificial barriers in the way of the exports of Canadian products to the United States have been greatly lessened and this, with the other causes named, will enable us to largely offset trade lost elsewhere by increased trade with our nearest neighbor. This is one reason for saying that Canada is likely to suffer less from the present war than any other nation engaged therein.

Another reason for expecting comparatively limited injury to this country is found within ourselves. We do not even yet realize the extent of the resources lying within the Dominion and the capacity they afford for the building up of a home trade thereupon. Nowhere can wheat be produced so cheaply as in our Western Provinces. No country is better adapted to the production of dairy products, bacon and the hardy fruits than are the Provinces of Ontario and Quebec. The capacity of the West in beef production is limited only by the number ready to engage in that line of endeavor. Our mines, our forests and our fisheries hold resources which, if properly conserved, will prove practically inexhaustible. Even a world ravaged by war will still want of the things for the production of which Canada has been richly endowed by nature.

Moreover, after the war, many people in Europe, who have suffered financial reverses, will come here with their industry and their skill because, owing to our unlimited natural resources, and our freedom from the blasting effect of the passage of hostile armies, they will see in this country a better prospective return for their industry and skill than they can find in their own shattered factories and ruined fields. This will mean greater production from soil, from loom, and sea, and this production means wealth.

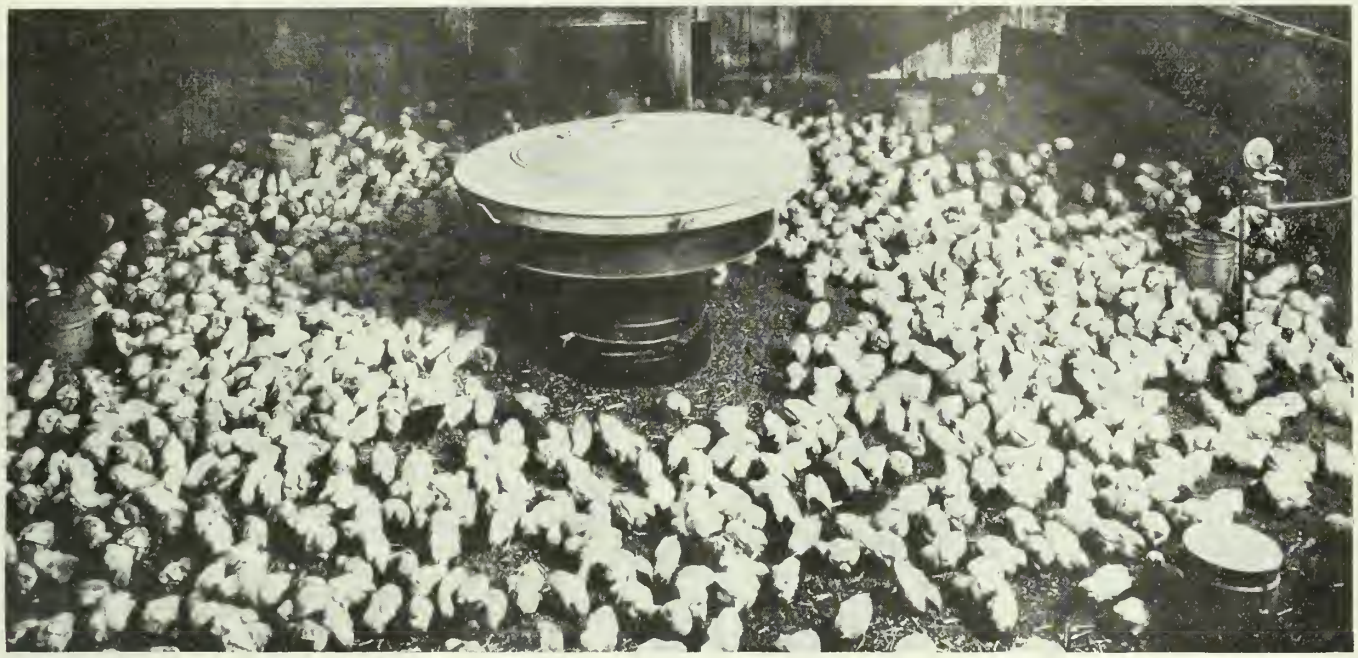
Canada would be better off in a material sense, and better off in other ways as well, had the war not occurred. But, for the reasons herein briefly outlined, the industrial check is likely to prove but temporary, and in a comparatively short time we may expect to see the Dominion again forging ahead at an even more rapid pace than was recorded in the last decade and a half. Geography and natural resources, coupled with the energy and skill of our people, will enable us to speedily recover from the effect even of almost world-wide destruction.

SOD-MULCHED ORCHARDS.

Considerable interest has attached to the findings of the experimenters at Geneva, N.Y. The now widely known Hitchings orchard showed that cultivation and manure gave no better results than sod-mulched orchards. A recent bulletin reverses this conclusion by observations from the Auchter orchard. The report states: By every test except color of fruit the tilled section of the orchard has been better than the section in sod; and the accumulation of the advantage to the tilled trees during ten years of testing makes a striking contrast to the eye alone, even at a distance. As measured by profits, which is the only index we have space to present, for every *dollar* taken from the trees in sod, after deducting growing and harvesting expenses, the tilled trees gave *one dollar and eighty-nine cents.*

The Safety First Chicken:

By A. P. MARSHALL



A mammoth brooder for young chicks. The principle involved prevents the overcrowding at night that often has such disastrous results.

Expert Advice on Poultry Raising and Incubation by a Successful Wyandotte Breeder

Every business man is constantly looking for pointers on how to increase his returns. Especially so is this the case with the poultry raiser. More people fail in this form of agricultural work, because of the lack of knowledge of a business that appears to be to almost everyone, a very simple one. The timely advice given by this well-known Wyandotte breeder, will be of special benefit to everyone who is looking forward to a successful hatching season during 1915. Readers of Farmer's Magazine will be able to get much valuable information from the series of articles on poultry during the winter.

TO produce poultry that will meet the present day high standard of quality requires business-like attention to the essential things that tend to influence the proper growth and keep the flock in such condition as to keep production proportionally great throughout the whole year. That great success can be attained in small flocks on comparatively small space has been repeatedly demonstrated.

Of course, there are a number of very essential considerations that may make or mar success, but we believe failure is due in more cases to neglect to avoid difficulties than by lack of attention to furnish what may be generally termed everyday essentials.

The poultryman who raises birds to show wants to produce something that will outclass his rival's birds at the time of the show and the market poultry man wishes to produce more marketable eggs and poultry of prime quality to secure the top prices for his product. He who can produce his goods out of the regular season in as vigorous and thrifty condition as those produced during the natural season has gained an advantage that his rivals cannot make up on him.

In considering any aspect of poultry work we believe it wise to most carefully consider the season's work and plan in advance the possibilities with the available material and conditions and on a most conservative basis make preparation to carry out the plan by taking all the precautions that will avoid the difficulties frequently seen where poultry is kept.

EGGS OR BROILERS.

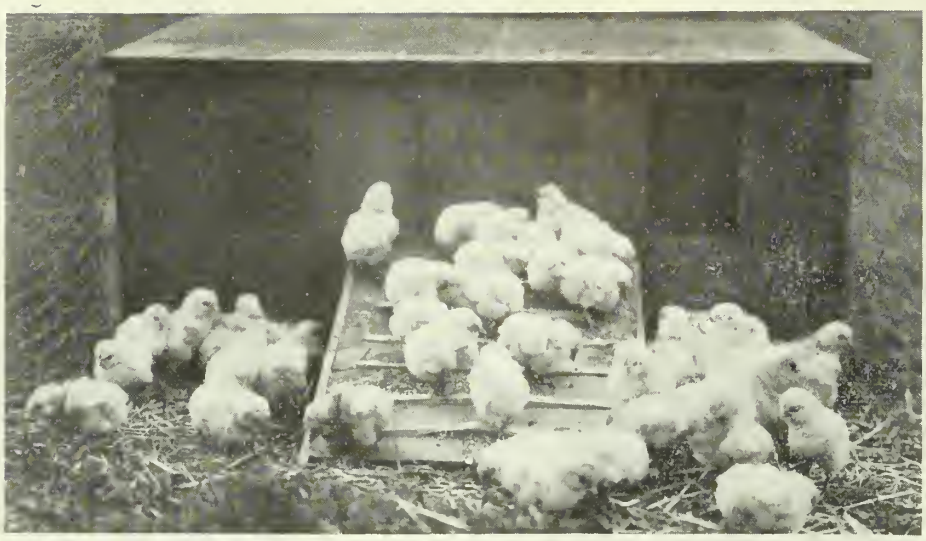
Generally some objective is the incentive to any special effort during the season. It may be some special show at the end of the year or a group of shows. It may be to supply winners for customers or perhaps to furnish early broilers or soft roasters or to get eggs early at the season when prices are high and in consequence obtain a much bigger return. Whatever the results desired it is necessary to plan a sufficient time ahead to be sure of accomplishing what is wanted with some allowance for shrinkage or failure on the hoped for results.

If seasons were all identical one could plan to get the same results with the same treatment year after year, but conditions vary so that ordinarily the crop is materially affected by any big deviation from the regular season. The shortage of early chickens last fall was a marked example of this fact.

Before starting the season's hatching which is usually the big factor in the year's work the condition of the breeders must have the closest consideration. Here is involved the task of having the breeders in the pink of condition when the hatching eggs are to be secured. The best eggs for this purpose will be secured from the hens when they are in the best physical condition. If they are run down from too much showing or from forcing for egg production they will not become physically fit until well on in the season. We would consider it easier to hatch chicks in December if the breeders were in fine fit then and carry them through a month more of winter weather than to hatch in January from the same birds if they had lost their snap. The chicks with one month less of winter to go through with a weaker start would be harder to handle than the sturdier chicks out of eggs laid when the hens were most physically fit.

VIGOR IN THE MALE.

So much is dependent on the good qualities of the male that we consider one of the first considerations of safety is the selection of the male. He cannot be too good either from a standpoint of the productiveness of his parents or his own constitutional vigor. We believe this to be true no matter what branch of poultry work is contemplated, fancy or utility. A weak well-finished male may produce something nice mated with strong females, but it takes the most careful after-selection to keep up the vigor and prevent the lowering of the vitality of the progeny on account of the introduction of the bird lacking vitality. As a general plan we consider it wise to select the very best type of male and mate to him such females as will affect his faults by the qualities they may show that he is lacking. At the same time it is a help to remember that the more nearly alike two birds are the more nearly alike should



Baby Wyandotte chicks in a small brooder There is every interest for the student in the rearing of a chick.

the progeny be. Great extremes cannot produce a great proportion of similarity and require longer careful breeding to utilize the original traits of value in both specimens.

Having our breeders selected it is advisable to make sure that their environment is all that could be desired to give all the natural comfort they need to keep them vigorous and capable of reproducing themselves in the largest possible way. By this we do not mean that lavish expense must be made for the birds. Very frequently the simple conditions are much more result-getting than extravagant conditions and require less production to make a profit.

ROOSTER IS HALF THE PEN.

The housing must be of a nature to provide great abundance of fresh air and sunlight at all times of the year. The temperature is not important, but the birds must be protected from stormy winds and be well protected when on the roosts at night. Males that we carry over the winter get out every day and most of the time have nothing, but snow for drinking water. We know of no method that has made hardier, sturdier breeders than this rough treatment of the males.

While the male is half the pen, the best male that could be secured could not possibly produce dependable stock unless the females were also of a high calibre. Good females with good males that will mate well with them make the best selection for building up a sturdy flock.

Having the pens selected and mated and everything in order so that they will be in good condition to produce eggs that are capable of hatching strong sturdy chicks it becomes necessary to plan ahead so as to have everything in readiness to give these chicks every opportunity of making the best growth. With the early hatches it is necessary to provide conditions that will as much as possible furnish those elements that make them thrive in the natural season. We believe it possible to mention these in a single sentence. They need sanitary quarters, clean feed of the right properties, lots of sunshine and fresh air of suitable temperature, pure clean water and conditions that make them scratch and work for the feed they get. All of these conditions can easily be

A movable colony house on the Brandon Experimental Farm in use this year.

supplied if a little thought is given the matter in advance of the actual need of the supplying of them. Ordinarily difficulty does not develop with the first brood or two, but as the chicks increase and space and equipment become used up and the work begins to crowd, the little fellows of the later hatches get less attention and either from having to be accommodated in coops that have already been used by earlier broods or placed on the same ground that has become soured or contaminated do not make the same growth as the older or earlier ones.

WHY CHICKS DIE.

Perhaps there are no causes that have made failures with poultry like overcrowding and contamination of the soil. The last we believe to be the greatest usual factor that impoverishes successful plants, the former being contributory to the same result.

Even on large plants where the acreage is larger than is always in actual use for the chicks, it has sometimes happened on most successful plants that soil contamination has made it necessary to abandon for the time the location where their operations have been heaviest. This is one of the troubles that can be prevented by taking safety methods before conditions arise that will affect the growth of the young stock. But a short time ago we heard of a very successful poultryman who had made in a few years $20,000 to $30,000, who found it necessary to abandon his plant on account of the impossibility of getting the same growth in his young stock due to soil contamination. When this occurs on a farm with reasonably good management how much easier can it occur where the runs are smaller and the birds more closely confined all the year round. By using the proper precautionary measures this tendency may be entirely prevented and a benefit secured to both the fowls and the soil from the treatment to prevent this contamination from constant use without any treatment. By frequently turning the soil and occasionally treating with air-slacked lime and sowing to a crop such as oats, rape or any other quick growing vegetation the trouble will be entirely prevented and no evidence of soil or stock deterioration exist from soil contamination.

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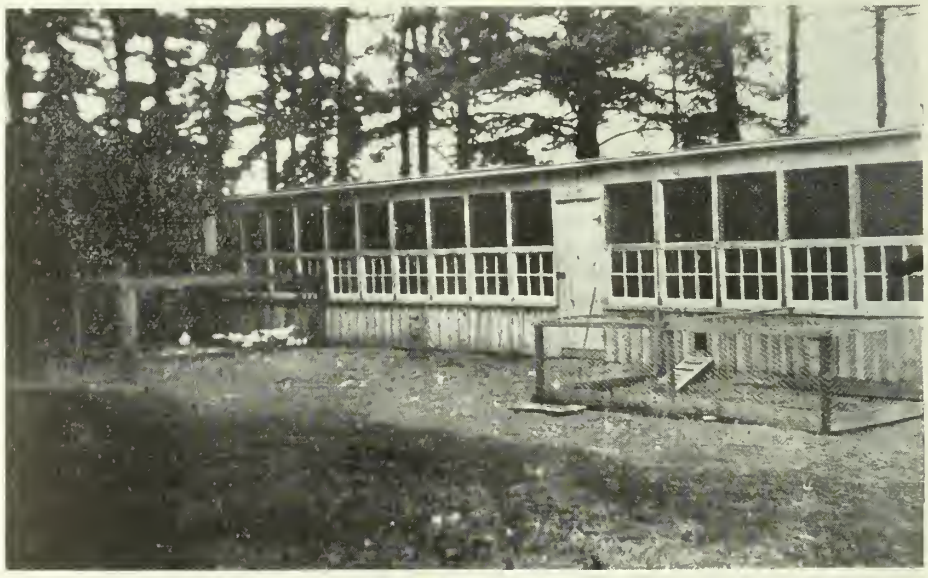


Modern poultry house on the farm of Albert Schurman, Central Bedeque, P.E.I.

The Consolidated School:

By RICHARD LEES, M.A.

A School Inspector Believes that this will Solve the Difficulty and be More Efficient than the $1,000 Salary

Manitou consolidated school, Manitoba. An average of 84 per cent. attendance last winter.

The question of rural school betterment is a live one. Articles on this subject have appeared from the pens of E. C. Drury, Rev. James Anthony, Miss M. D. Moffatt, and W A. Craick. These brilliant writers differ widely in some points. It will be remembered that Mr. Drury called for $1,000 salary and male teachers in ungraded schools. In the salary question and better schools, this has been in accord with the contentions of Farmer's Magazine since its beginning. At our request, Inspector Lees of Peterboro has given us here the arguments in favor of the consolidation of rural schools. Readers who keep the magazines on file will be able to refer to preceding issues of January and October last. Inspector Lees goes to Ohio soon to report on work there along this line. References here are frequent to Manitoba schools.

The secret of the success of the old public school largely lay in the work of some big men who acted as trustees. The first teacher who directed my early school training, was selected in a novel manner. The leading trustee was a brusque old chap, with decided ideas on personal influence. He visited the Provincial Normal School, then under the late Thos. Kirkland, and by personal interview selected his man and agreed on the salary afterwards. His method made a reputation for that section.—Editor.

THE problem of the country has been forcing itself more and more to the front in recent years. Improvement that followed better methods of farming, brought vividly to the attention of thinking people, interested in rural life, the idea that conditions on the farms were capable of improvement. The rapid increase of wealth and population in the cities, in contrast with the country, with the consequent continued and increasing drain of the best and most vigorous young blood from the country districts to the towns and cities, have forced on the attention of all the fact that conditions in the agricultural districts are far from satisfactory.

It is needless here to enter into any argument in support of this contention. The fact is admitted by all. The many and varied remedies suggested on all hands prove the widespread feeling that there exists a condition requiring remedies. Doubtless conditions have improved to some extent. The rural telephone and rural mail, improved machinery and better methods, co-operative marketing in some places and good roads in others, have all had their influence, but yet people leave the country for the city and rural depopulation continues faster than ever. This, too, at a time when it costs more than ever before to live in town, and what the farmer produces never brought better prices. For all this there must be reasons.

THE RURAL SCHOOL UNPROGRESSIVE.

It is not proposed, in this article, to go into any general discussion of these reasons but to deal with only one of them, the rural school. Against this institution it is charged that it has not played the part that it should have in the remaking of country life, and not only so but that it has been an obstacle in the way of progress. It has not kept up with the advancement of the times. While progress has been made along almost every other line, the country school stands just about where it was twenty-five years ago, having made slight advance in certain directions which have been more than counterbalanced by retrogression in others.

The school house and grounds instead of being, as they ought to be, as other public buildings are, the most tidy, attractive, and well-kept in the district, are in most cases, the most desolate, uncared for, uninviting, and beggarly looking places to be found, a disgrace to the community rather than an honor or source of pride. Nor are they any better inside than outside, though unfortunately fewer people see the inside. That is reserved for the teacher and the children, who are compelled to suffer the slow and excruciating torture of having their sense of the beautiful and attractive in life killed by inches. And we continue to wonder why children do not like school.

To a large extent the course of study and the methods of doing things have remained unchanged, the chief difference being that while the school of a quarter of a century ago consisted of from 40 to 80 or 100 pupils, many of them well up in their "teens" and had a man in charge, the school of to-day has from 10 to 30 little boys and girls, few of them past twelve or thirteen years and is presided over by a girl, often scarcely older than the senior pupils of the former time.

The Vancouver High School. Higher education gets its efficient buildings and well-equipped teachers. Our public schools, where 75 per cent. of our people complete their training, suffer in comparison.

Warren consolidated school in Manitoba, where several ordinary schools were abandoned.

Thus it is claimed that the rural school has failed to keep pace with the progress of the country life and activity in general, as well as with the progress that education has made in the town and city schools. In them, the boys and girls of to-day are provided with beautiful, well ventilated and well lighted buildings, equipped with laboratories, gymnasiums and other modern appliances. Is it that the city children need better advantages or deserve better? What do the fathers and mothers, what do the boys and girls themselves say?

Not only is all this so, but it is freely charged that the rural school, by being a small copy of the town school is, if it fits for any of life's activities at all, fitting for those of the city and not of the country. In this way it is encouraging the cityward trend and in so doing is assisting in robbing the country of leadership and enterprise by taking away her best blood. If these things are true, and who will deny that they are to a greater or less extent, in every rural community, then why are they so?

There would seem to be, at the present time, three main causes operating to produce inefficiency and unprogressiveness in the rural schools. They are (1) the antiquated and out-of-date system of organization and control, (2) the smallness of many of the schools, and (3) the lack of adequate financial support. To these attention will be given in this order.

In Ontario, the school section is the unit of school government. The sections are of every conceivable size and shape, with little regard to economy or efficiency of management. The school is frequently badly located, and is controlled by a board of three trustees, chosen in many cases

An ordinary school building in the Alameda District, Sask. This is in the centre of a rich farming area. Photo by editor.

because of their lack of interest in the school from any other standpoint than that of keeping down expenses The sections are frequently torn by local political, religious or family jealousies, and the school is invariably the storm centre around which these feuds rage. The tendency of the whole system is to form a bar to progress and efficiency rather than a stimulus.

Not only so but it results in an unequal and unjust distribution of the cost of education. In my own inspectorate there are sections paying a school tax of over 20 mills while across a concession line, in an adjoining section the rate is only two mills and a better school is provided. Either this is altogether wrong or our boasted principle of free schools or equal distribution of the cost of education is wrong. As there are few of us except the incurably selfish, with no children to educate, who would go back to the old system of every one paying for the education of his own children, we are forced to conclude that the present system is not just. It is now freely conceded by all intelligent thinkers that it is the duty of the state to provide for the education of its future citizens. If that universally accepted principle be correct, it is manifestly wrong that the burden imposed on one citizen should be proportionately many times greater than on another.

A consideration of such facts as these and many others that might be presented, leads to the conclusion that the present system, with its local jealousies, narrow outlook, false economic ideas, unequal distribution of burdens and advantages, inefficiency and general unprogressiveness has outlived its time and should give place to something more suited to modern conditions. In short, a reorganization of our whole system of school government is necessary to future progress. Taking the United States as an example, it is interesting to note that in twenty of the states, the school district or section has been abandoned. In a dozen of these, the township has become the unit and the schools are managed by a township board. This has proved to be a great advantage, but in the rest of the twenty where the county has become the school unit, it has proved still more efficient and economical. If the civic affairs of a county can be managed by a council representing all its parts, why not the schools? It would result in a fair and equitable distribution of the burdens as well as the privileges of education. Best and most important, it has proved in experience to be the forerunner of the consolidated rural school, which brings me to the second defect mentioned, the smallness of the schools.

CONSOLIDATION THE REMEDY.

The writer is firmly of the opinion that the regeneration of the rural school is to come through consolidation and in no other way. The belief is based, not on mere judgment or opinion but on the experience of those who have tried it. For forty years the consolidated rural school has been on the way and now it has arrived. In every state of the American union it has taken root. Several whole states are fully consolidated. It is not confined to one locality but is found thriving with equal vigor on the rugged hills of the north-east, the wide stretching plains of the middle, and the sultry slopes of the south. In all kinds of climate and physical conditions, it makes good. In Manitoba there are some sixty consolidated rural schools and the number is rapidly increasing. There the universal testimony from inspectors, trustees, teachers, officials, parents and children is that they would not, under any conditions, think of returning to the old plan. New Brunswick has some seven consolidations that are giving excellent satisfaction. The pioneer school in that province, after having been in operation for a few years, was burned, thus affording a fine opportunity for a return, but the people decided to rebuild rather than go back to the old system. If these schools can be successfully operated in the climate of Manitoba and New Brunswick, there should be little difficulty in Ontario.

WHY CONSOLIDATE.

It will not be out of place, at this point, to consider some of the reasons for the success of the consolidated rural school, basing these entirely on the results that have been attained and not on theory. Consolidation has proved a great advance in rural education because:

1. *It tends to greatly increase the attendance at the rural school. This is true both as to increased enrolment and a higher average for those enrolled. Taking, for illustration, the case of Manitoba. In 1912 the average attendance at the consolidated schools was 73 per cent. of the number enrolled, while for all the rural schools of the province, it was only 55 per cent. At the new schools, the average was just about equal to the total enrolment for the same districts before the change.*

2. *Not only is the attendance improved but tardiness is practically eliminated. Besides, children get to school dry, comfortable, fresh and fit for study in all kinds of weather. The health of the pupils is better owing to freedom from wet feet, damp clothing, etc. Most of the degrading moral influences, such as vulgar and profane language, that are too common on the way to and from school, are avoided in the security of the properly controlled van.*

3. *The larger numbers brought together make possible the development of a community interest by cultivating a school life and spirit that are entirely lacking in the average rural school of to-day. In more than half the rural schools of Ontario, the attendance is below 20. In 500 schools there are fewer than 10 pupils, and 110 have less than five. This condition makes impossible the playing of any games that require team action. In only rare cases is it possible to arrange matches with neighboring schools. Thus one of the greatest influences of the school life is lost and the boys and girls grow up without that sense of community action and co-operation, the lack of which is universally recognized as one of the most serious defects in the rural life of the present.*

A village at Baldur, Manitoba. Some overzealous local politican painted the National School sign on the bricks on the eve of the recent provincial election. Photo by the editor.

4. *The consolidated school makes possible, in the country, all that now renders the city school superior, the grading of classes, ample equipment, such as laboratories, workshops, etc., and for teaching subjects, teachers possessing special qualifications for certain departments of the work, as well as greater permanency and better qualification in the teaching staff. It also makes possible the securing of teachers, as principals at least, with an interest in and a devotion to the life and activities of the country.*

5. *The buildings are better and of a more imposing character, thus taking hold on the imagination of the community in a way that even the best of the district schools never could. As a result, the school becomes a community centre for social and intellectual development to an extent that has never been possible under the present system. The building is, of necessity, so situated as to be within easy driving distance from all parts of the district it serves, and so can be reached without difficulty by all. The system of conveying children to school puts all on an equal footing and does much to break down class distinctions, allay section feuds and promote a spirit of harmony and co-operation in communities that have been lacking in these qualities.*

6. *The teachers, instead of being isolated individuals, with no means of communication, no co-ordination of work, no common interest or aims, are brought together, organized into a unit with a common purpose and aim. Some of the chief reasons why teachers leave the country and flock to the city are lack of companionship, the need of someone to refer to, consult with and seek advice from, the sense of isolation in dreary and uninviting surroundings, and the deadening routine. In the graded consolidated school these things are largely overcome by the bringing together of a group of teachers, in a suitable building with attractive surroundings. It is thus made possible to secure and retain the services of good teachers with much less difficulty than under existing conditions.*

THE COST OF IT.

There are, of course, difficulties in the way but they are by no means insurmountable and when they are overcome, the results are well worth the effort. The most serious of these difficulties is probably the increased cost. It must be conceded that the consolidated school costs more than the present schools are doing. Experience has shown that they cost between fifty and a hundred per cent. more, but what of that? All authorities are agreed that if our rural schools are going to fulfil their purpose in the life of the country they must cost more. To make them worth while we will have to spend more money on them. A recent writer suggests the sum of $1,000 as a suitable average for teachers and this is double the present outlay. To consolidate all the rural schools wherever consolidation is possible would cost less than that and would be infinitely more efficient.

But where, it may be asked, is this money to come from. The same writer to whom reference is made above contends that the rural communities cannot themselves bear this additional burden. With this I do not agree. I am firmly convinced that if the people directly interested would have enterprise enough to undertake the outlay and administration necessary to make their schools thoroughly efficient, not many years would elapse till it would be seen that no money had ever been expended to better purpose even from a purely financial view, let alone the greater advantage that would come in the things that cannot be reckoned in dollars.

In a rather poor rural community visited periodically by the writer, one of the local storekeepers tells me that his tobacco invoices amount to over $50 a week and adds modestly that he thinks the other two dealers handle, together, as much as he does. On that basis this community pays over $100 a week for tobacco. The people who deal there come from four school sections with five teachers, but they are not all the people of these sections. The five teachers are paid about $2,500 at least one-third of which is paid by the Government. If to this is added other expenditure for education, including interest on investment, maintenance of plant and everything it will not exceed half of what is paid for tobacco in a poor community. Now, while this money cannot be diverted to the cause of education, it should readily be admitted that it is ridiculous to contend that people are not able to pay at least as much for education as for smoke.

However, while entirely dissenting from the contention that the rural population could not well and profitably afford to spend more money on schools, yet I am just as firmly of the opinion that they should not be required to do so, in a direct way at least. The additional cost should be borne by the province. Our educational system is built on a principle of free schools, that is schools provided and maintained at the public expense for the benefit of all. The correctness of this principle, few now question. It has been the ideal of thinkers and statesmen since the days of Plato and Aristotle, and is now disputed by only the selfish and reactionary. It follows then that the people as a whole should bear equally the cost of education. That is that it should be a tax on the wealth of the whole province in equal proportion.

Of recent years, there has been a marked and very rapid concentration of the wealth of the country in the large cities. In the last analysis, this wealth is largely the result of the industry and activity of the agricultural districts. The handling of the produce of the farms and the supply of the things required on the farms have produced the business that has made possible the accumulation of this wealth. Nothing seems to be fairer than that it should be called on to bear its proportion of the cost of rural education. Especially is this the case when it is kept in mind that not only the wealth but the very life itself of the large centers of population depends on the rural communities. The cities are drawing away from the farms the young, vigorous and ambitious of both sexes, to pour into the effete stream of their life a richer and more virile blood, without which they could not for long endure the deadening strain of the city. What more fitting, than that, in return, the city should contribute of its material things to enrich at its source the life that is soon to become its own?

Come from what source it may, there is no doubt in the minds of those best able to judge that more money, indeed a great deal more, must be provided for rural school education. It also seems evident, as has been shown from the experience of others, that the most effective way in which that money can be spent is in the consolidation of the rural schools. The objections that loomed large in the eyes of both advocates and opponents a few years ago are gradually vanishing as the plan comes into wider use and experience is gained. In no other way can the same degree of efficiency be attained for the same expenditure.

THE CONCLUSION OF THE MATTER.

In the foregoing, there has been no intention or desire to discredit or belittle in any way the praiseworthy efforts that are being made in many ways and with varying degrees of success, to improve rural school conditions. From an observation, however, of the results obtained and a somewhat careful study of conditions elsewhere, the writer is firmly of the opinion that no mere surface measures will accomplish anything of importance, but that reforms must go to the root of matters and the whole system be put on a basis more in accord with present-day conditions and requirements. Because a system served a good purpose in a former time and under conditions that are gone, is no reason for retaining it after it has been out-grown and become obsolete. Nor is it necessary for us to be pioneers in this movement. Others have preceded us and done the experimental work and we have but to follow to achieve the same measure of satisfaction and success that has come from the adoption of modern ideas elsewhere. The question is one for the people of the rural communities themselves. As soon as they awake to a full realization of present defects and get a clear view of the better things attainable, when the people of the country open their eyes to the fact that the boys and girls in the country schools are not getting a fair deal, then but not till then will the change come. It is in the hope of assisting in some small measure to this end that the present article has been prepared.

The Verschoyle school in Oxford County, Ontario. One of the thickly settled portions of that province. Here a school fair has worked wonders in local enthusiasm. It is in charge of a lady teacher.

SERPENT-BITE ANTIDOTES.

Effective antidotes for snake bites which already have saved the lives of numerous persons in India are being produced as the result of work carried on at the Parel laboratory at Bombay. Between the years 1887 and 1911, it was estimated that 543,991 human being were killed by poisonous reptiles. The figures were so appalling that scientific experiments were started in an attempt to find something which would counteract the effect of the venom of the various serpents commonly encountered in the central part of the country. Extraction of the poison from the most deadly of these snakes constitutes the work being accomplished at the Bombay laboratory, and this process is as simple as it is interesting. The snake is held so that it cannot strike those about it, while a small wine glass with its top tightly covered by a piece of cloth is placed near the reptile's head. It usually strikes almost immediately, its sharp upper fangs piercing the cloth and the poisonous venom dripping into the glass. From such an operation approximately a half-teaspoonful of the liquid is collected, an amount sufficient to kill half a dozen persons. This is dried over lime, dissolved into a salt solution, and injected in small doses into horses. For two years this treatment is continued until an animal is able to take a quantity equal to 200 times the original amount. The horse's immunity to the poison is caused by a material which is gradually built up by his system. This material is contained in the serum of the horse's blood, which is administered to human beings by subcutaneous injection. If the serum is injected immediately, the bite will not result disastrously.

Twisting Trails

Illustrated by H. W. Cooper

By Robert E. Pinkerton, Author "The Print of the French Heel"

SYNOPSIS OF PREVIOUS INSTALMENT.

Sumner is the owner of the Whisky Jack mine. Heatley, a mining expert with his family, is making a trip through the mine district and is to send Sumner a report as to the mine's value. Upon this report depends Sumner's whole financial stability. Sumner's daughter, Helen, accompanies the Heatleys, and a chance traveling acquaintance whom they meet, a Miss Rea Straine, also makes one of their party for the journey into the interior. She is mistaken for Helen and kidnapped by Milford, a woodsman, at the instigation of Mark Fowler, whom Sumner had appointed manager of the mine, and who turns out to be of bad reputation.

Sumner receives a wire from Heatley saying Helen has disappeared. He concludes this is Fowler's work who for some reason wishes to prevent Heatley sending a report on the mine, and he wires James Stover, a friend, to search for Helen. In the course of an altercation with his Indian wife, Milford kills her. Rea then wanders to the other side of the island and comes across a young fellow who is sitting in a canoe beside a rock.

CHAPTER V.—*Continued.*

"I'M sorry if my presence here startled you," said Rea, with a smile. "I suppose my being here is quite as mysterious to you as your presence is to me."

"I'm over at the mine, you know," said the stranger, catching his paddle on the rock to keep the canoe from floating past.

"You mean the —— ?"

"Whisky Jack. Sumner's mine. It's only eight miles beyond. I do the assaying there," he added a little boastfully.

He was very young, the girl thought, and, as she noted the youth, enthusiasm and innocence in his face, she gradually became more cordial in her manner.

"Won't you stop for a while and tell me about it?" she asked. "I never saw a mine, never heard much about one, except that it is a place where they get gold out of the ground."

He turned the canoe to the strip of sand and then scrambled quickly to the rock beside her.

"I'd love to tell you," he cried. "I'm crazy about mining myself. This is my first try at it, I was just out of college in June and this is my first job. But I like it more than I ever thought I would."

"You feel that you are really doing something, after all the years in school, I suppose."

"That's it. Doing something that counts. Being with big men who are doing big things. It's great. It makes you want to do the big things yourself, pushes you on, you know."

"Are you with big men up here?"

"Sure. E. G. Sumner owns the mine, or about all of the stock. And Mark Fowler is superintendent. I've learned a lot from him. Not so much about mining but about business methods. He's a wonder. I think I'm mighty lucky to get in with him and to get on as well as I have. He takes a lot of interest in me and has me over at his cabin nights. He's more like a father than a boss."

"Is he an old man?"

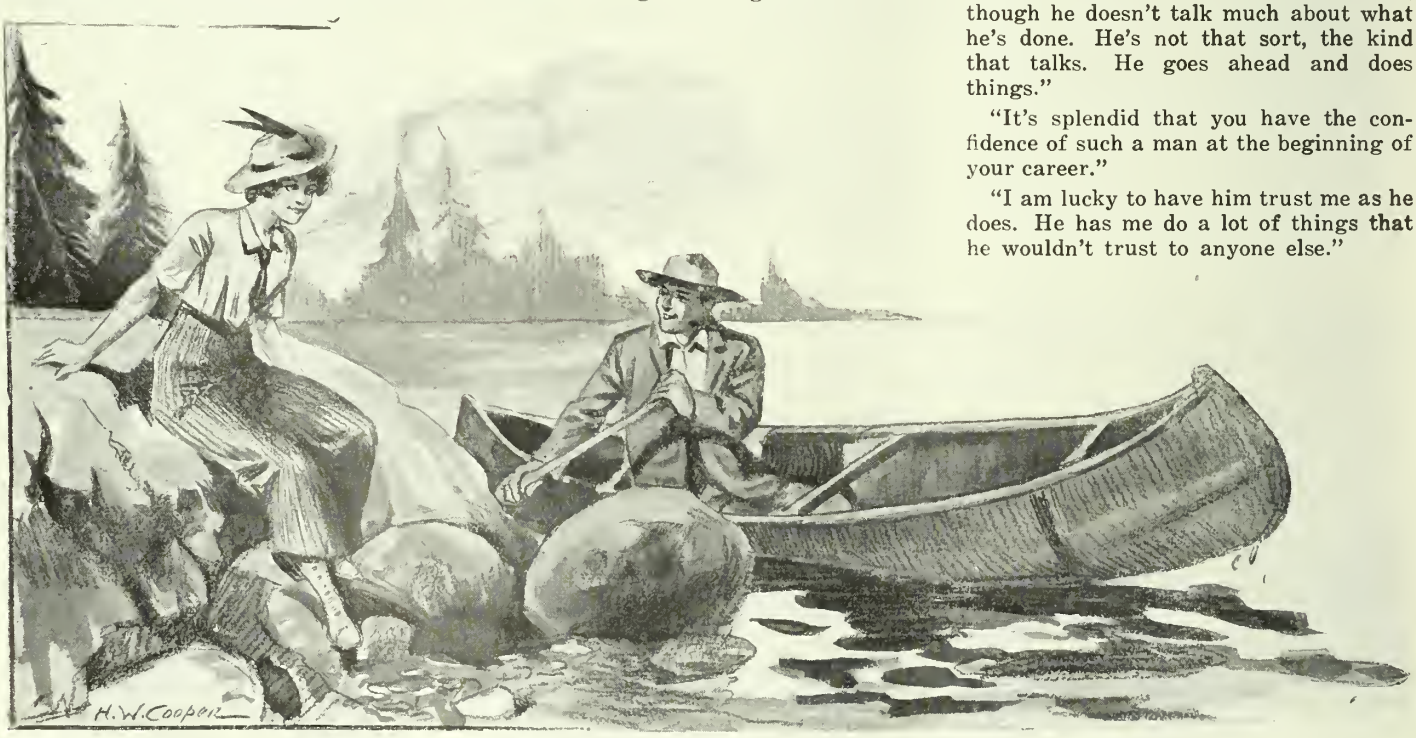
"Only about forty-five."

"Where was he before he took charge here?"

"Out West, I think, and in Cobalt, though he doesn't talk much about what he's done. He's not that sort, the kind that talks. He goes ahead and does things."

"It's splendid that you have the confidence of such a man at the beginning of your career."

"I am lucky to have him trust me as he does. He has me do a lot of things that he wouldn't trust to anyone else."



She looked down, startled, to see a young man dresesd in khaki, high-laced shoes and a felt hat, sitting in a canoe beside the rock.

Rea experienced a slight feeling of shame. It was like reading a book in which the leaves had not been cut. She had only to insert a delicate knife and the pages lay open before her. But the story was too important for her to stop because of conscience. She had long been in the habit of using any circumstance, person or fact that came her way, shaping it to her own ends or using it as a stone upon which she might climb higher to look over a wall.

Her first thought, when she saw the youth in the canoe, had been of escape. It was not her nature to rush too quickly into anything, however, no matter how quickly she might be able to make decisions in an emergency. She did not at once throw herself upon the young man's mercy because she knew there was no hurry. Milford was still drunk somewhere on the island, probably near the south end, nearly a mile away. The young man could take her away, even if Milford did turn up. But first she had to learn who he was and where he was going.

The information that he was employed at the Whisky Jack had given her caution, but a caution which his frankness and youthful enthusiasm had rendered unnecessary. His first words had shown that she could do with him as she wished, but his boast of intimacy with Fowler made her hesitate.

As her quick mind formed plan after plan, while her attention appeared to be given absolutely to the young fellow's confidences, a thought suddenly struck her. He was paddling north. The Whisky Jack lay in that direction. Where had he been? If he came from the south, did he not come from Vermilion? And, if he had come from Vermilion, had there been no effort by Heatley to find her when she did not appear at their camp that night?

"You are on your way to the mine now?" she asked when the opportunity came.

"Yes, I would have reached there by supper time, but I'll be a little late now."

"Then you are coming from Vermilion?"

"Well, no, not exactly. You won't tell anyone but, you see, I am on a sort of secret mission."

"How exciting!"

"Not exactly exciting." He replied as though adventures were of daily occurrence and this affair of slight importance. "I just had to paddle down to MacArthur Lake and then turn west until I struck the railroad at a station where trains pass. I left there this morning."

"That wasn't exciting, was it?"

"No, but it was an important mission and I was the only one at the mine that Fowler could trust to make the trip."

"But what on earth could you have done, just paddling to a way station and back?"

"Oh, I did it once before, about a month ago. You see, Hank Rothwell, our mail carrier, is not exactly the sort that can be depended upon. We haven't fastened anything on him but Mr. Fowler says he has reason to believe that Hank has stopped a letter or two. Mr. Fowler even went so far as to say that he believed Hank belonged to a gang of criminals he had heard about in Cobalt and that he had come to the Whisky Jack in the interests of the gang.

"Well, Mr. Fowler had some important papers coming, something to do with a mine in Cobalt that he is interested in and he didn't want Hank to have a chance to get them. Of course, if they came in the regular mail, Hank would see them. So Fowler had a friend take them through on the passenger and I met the passenger at the way station and brought them out. That's what I'm doing this time. The package is in that little leather case strapped to the thwart. Then, if I get drowned, they can be found anyhow. That was Mr. Fowler's idea."

Rea was thoughtful for a moment. Then she changed the subject suddenly.

"Do you know that I am glad you took this important trip just at this time? It happens that I am lost up here in the wilderness and you have come along just in time to save me."

"Lost!" cried the young assayer. "Why didn't you tell me before? It is lucky that I happened along. There isn't a soul living on this lake, none nearer than the mine and that's eight miles from here. You would have starved to death."

He looked at her in amazement.

"But how did you get on to this island?"

"My canoe drifted away. I had been looking for a way out of this lake and landed here this morning. I was tired, and I didn't pull the canoe up very far, I guess, and the wind blew it off the sand beach."

"You certainly are cool about it," he exclaimed in frank amazement and admiration. "Come and we'll start for the mine. To-morrow I can take you wherever you wish. Were you with a party?"

"Yes, several of us were on a canoeing trip and I paddled off last night at sunset and couldn't find my way back."

The assayer held his canoe and Rea stepped in. She took her place in the bow, but she did not paddle.

"You won't mind," she said. "I'm so tired and I'm not accustomed to it."

It was not so much a deception as a display of wisdom. When a young man wants to do something for a pretty girl, he wants to do it in the best possible manner. Tommie Loblaw thought highly of his ability with a paddle and, though he had traveled twenty miles that day, he pushed the canoe rapidly northward. Since he had left college to accept the position of assayer at the Whisky Jack, he had not seen a white woman except the few stolid, middle-aged wives of Vermilion. Here was a girl of the type he had danced with when at college. Then he had been a student. Now he was a man of the world, actively engaged in the world's work, big enough and old enough to be a protector of women, not a playmate.

Rea had seen all this when she had looked up to find him in the canoe beside her on the island. Now she allowed him to talk on as he paddled, a question or two keeping the conversation where she wished.

After two miles she turned to see that they were passing an island.

"What a pretty place!" she exclaimed.

Her surprise would never have led anyone to believe that she had seen the island as she lay on the rock. Frequent glances had kept her informed that they were approaching it.

"What a beautiful place to camp!" she went on. "It makes me hungry just to look at it."

"Hungry? By jove, you must be hungry. What a simpleton I have been. You said you were lost yesterday and here it is more than twenty-four hours since you have eaten."

He vented his indignation at his own thoughtfulness upon the paddle and swirled the canoe sharply toward the island.

"I'm awfully sorry," he said.

"Don't be," she replied. "Perhaps I'm so hungry I had become used to it. And I didn't know whether you had any food with you."

He nodded to the big pack between them.

"There's a lot in that, enough to last a man a week. I wouldn't take even a short trip up here without plenty to eat. You never know what will happen."

They landed on a sharp point of rock and he carried the pack to the top, more than one hundred feet from the water, before they found a level spot for a campfire and their supper.

"It is lovely here," said the girl. "You be the cook and I'll go down and get some water."

She went back to the canoe, turning several times to see that, as she expected, the craft was out of sight of the camping spot. Once at the canoe, she quickly floated it and led it past the point and into a cove. There she found a place where the water had worn away the rock, leaving a long, narrow ledge two feet above the surface. Under this she pushed the craft and fastened it. Then, filling the kettle with water, she hurried back to the campfire.

Loblaw was not an expert cook, and Rea gaily helped in the preparations. The gaiety continued through the meal and was not ended until the youth, running to the lake for a kettle of water with which to wash the dishes, shouted back:

"The canoe is gone! We're stranded!"

The terror in his face was reflected in that of the girl as she ran to join him.

"What will we do?"

"Wait until we're found, I'm afraid," he said. "Luckily we have plenty of grub and you can have my blanket."

"Why not look for the canoe?" asked Rea. "Perhaps it has not gone far. It may have caught on the shore. Run to the other end of the island and see. The wind is that way."

He did not move. His face went white, and she saw his hands tremble.

"Mr. Fowler's papers!" he cried. "They were lashed to the thwart."

"Then hurry!" she exclaimed, and pushed him toward the brush.

He ran up the slope and out of sight. Immediately Rea turned to where she had hidden the canoe. Pulling it from under the ledge, she stepped in, knelt in the center and was off. In five minutes she was far out from shore.

Paddling steadily in the direction from which they had come, she did not turn when she heard his cries behind her. He called again and again, but she kept her course toward the island on which Milford lived.

CHAPTER VI.

MILFORD, sitting with his back against a giant white pine at the south end of the island, rubbed his half-open eyes and looked down the lake. A mile away he thought that he saw a canoe. In five minutes he was certain that he did.

"Fowler said keep girl hid," he muttered as he scrambled to his feet.

He hurried to the cabin as fast as his condition would permit but it was empty. He called several times, but there was no answer.

"Fowler said keep her hid," he muttered again and began a circle of the island, starting northward.

But he found no sign of her and started back along the west side. Near the south end he heard someone and hurried forward through the brush. Bursting out, he came upon the shore. Immediately in front of him was a man, who, a small hammer in one hand, was tapping away at the hard granite. In the water below him was a canoe, a man sitting in the stern.

The man on shore, intent on his hammering, did not look up.

"What you doing here?" demanded the woodsman.

The rock-tapper carefully finished extracting a piece of stone. Then he glanced up.

"How do you do?" he said in a preoccupied manner. "Pleasant weather we're having."

"What you doing on my island?" demanded Milford, angrily.

"Geological survey," quietly answered the man, continuing his tapping in another place. "Here, George, put this in the canoe. It's a splendid specimen," and he tossed a piece of rock to his canoeman.

"Government?" asked Milford.

"Certainly," answered the geologist, walking farther away and beginning to break off rock in another place.

Milford sat down and watched him in silence. For the first time he became aware of the fact that he had carried a bottle in his hand throughout his search of the island. He lifted it to his mouth. Then, remembering the demands of hospitality, he scrambled down to the geologist.

"Have a drink?"

"No, thanks, I never touch it," and the geologist continued his hammering.

Milford turned to the canoeman, extending the bottle. This time his hospitality was not refused, for George quickly pushed the canoe nearer shore and reached out a hand.

"Me-gwetch," he said, after a long pull.

Milford took a drink and sat down with this more congenial company.

"Workin' for Government?" he asked thickly.

"Yes."

"Been 'round here long?"

"Just started out."

"See some city tourists comin' out?"

"No."

Suddenly, in the midst of a harangue, his head fell forward onto the table and his sentence ended in a heavy snore. "Will you do me a favor?" asked Rea, springing to her feet and hurrying to the geologist.

"Not a man and some women and guides?"

"No."

The geologist had ceased tapping with his hammer and was examining a bit of rock with a pocket microscope.

"Heard there was such a bunch camping near here," Milford went on. "Thought you might of seen 'em. Have another drink."

The canoeman drank and Milford, bottle in hand, went on down the shore.

"Paddle on, George," said the geologist. "I'll keep to the island."

He walked on rapidly, his attention confined, not to rocks, but to strips of sand along the shore. Not until reaching the north end of the island did he stop. There, in a bit of sand beside a level rock, were marks where a canoe had been landed. Beside it were the prints of small shoes and of a larger pair. He looked at the impressions in the wet sand carefully and then, with a sweep of his foot, obliterated them.

"We'll paddle over to that point on the mainland and make camp," he told the canoeman as he took his place in the bow.

"Bum rocks there," commented George, as they shoved off.

"Fair," said the geologist. "A puzzling formation."

George plunged at once into the work of camp-making, while the geologist went to the point of rock near which they had landed and looked out over the lake. When George called him to supper he took his plate and sat facing the water. After he had finished eating he returned to the point.

While he watched the big island before him and the lake to the north and south, without missing even the splash of a leaping fish, he was also thinking and, from the perplexity evident in his expression, he was thinking with little result. Just after sunset, when the shadows began to deepen along the western shore, he started and looked northward. He strained his eyes for a moment and then settled back against the rock. At last he looked closely again and was sure he saw a canoe slowly moving toward the island. After nearly half an hour he saw it land at the northern end.

"Let's go call on your friend," he said to George, as he hurried back to camp.

George remembered the bottle and lifted the canoe into the water at once. In ten minutes they had landed on the east side of the island and took the trail to Milford's cabin. The dogs were running rabbits far down the island and they were not heard as they approached the front door.

"Where you been?" the geologist heard Milford demand.

"Walking about the island," a girl's voice replied.

"Seen anyone?" questioned the woodsman suspiciously.

"Not a soul. This is surely a deserted place."

"You stay in the cabin to-morrow, you hear?" Milford went on gruffly.

There was no reply from the girl, and the geologist, without knocking, pushed open the door.

Continued on Page 58.

The Farmer and Business: By Andrew Kyle

A striking scene of the Wallace farm at Simcoe, Ont. Note the window values and the trees. A splendid farm manufacturing plant.

The Farmer Wants Canadian Made Machines But He Also Wants Efficiency and Economy—Are Manufacturers Studying His Needs?

The farmer and the manufacturer are getting down to sensible conferences, thanks to the stirring times we are living in. In November a conference of manufacturers and members of the Grain Growers passed off harmoniously at Winnipeg. In the Review section, the result of this will be read. There are vital differences in the viewpoints of each side, and yet nothing good can come until working compromises are reached. The future looks hopeful just now. There are many things both sides will have to forget, and to improve upon. The writer here touches the vital question of machinery inefficiency and duplication upon the farm.—Editor.

THE wisdom of basing national prosperity upon the soil is being demonstrated these days. When the stock market is closed and real estate offices are conspicuous because of their inactivity, and manufacturers and merchants are sitting up nights to devise ways and means of avoiding bankruptcy, the agricultural life of older Canada has gone forward with scarce an interruption. While city households have diminished their domestic staff, farmers' wives have been employing more assistance than ever. Factories have been standing still, but farms never were busier. Fall plowing and replowing has been done on a larger scale than usual, and rare is the rural community in which this is not a record year for the acreage sown to fall wheat. Barns are well filled with hay. Granaries are filled quite up to the average, while silos are plenished to overflowing. The exceptionally fine, mild, open fall has made possible the cheap production of butter of a fine quality; and brought dairy and fattening herds to the verge of winter in splendid condition. This, along with the splendid root crop, causes the farmer to have no uneasy hours as he ponders on the condition of his barns and byres.

This rural prosperity in the days when the business men of the city were facing the future with white faces should suggest certain things to Canadian statesmen and Canadian merchants and manufacturers.

And first, trade with rural Canada, particularly with the farmers of older Canada, should be pushed with greater zeal. Older rural Canada is prosperous, and prefers to buy Canadian goods when Canadian goods are as good as those made elsewhere. Rightly or wrongly, the Canadian farmer thinks that his good intention are not met in a fair and square business-like spirit in this particular. He has the impression that manufacturers generally, and that manufacturers of farm goods in particular have hitherto catered to the foreign market, both in prices and in quality of goods, leaving him, meanwhile, to take what is rejected by the foreign trade. In the readjustment of business that is looked for in the near future, the Canadian farmer expects to be asked to make up for all the losses accruing to manufacturers and merchants because of the present financial storm, though rural Canada has not been the cause of the trouble in any way, nor to any degree. The farmer takes no credit for the making of "bog business," but he refuses to be saddled with the blame of bringing big manufacturing establishments and "big business" to the verge of ruin, nor does he see why he should be looked on by anyone to condone other men's blunders.

And no better time than the present ever presented itself for the building up of confidence among the "business" and the manufacturing and the agricultural activities of Canada. No animosity exists between these two classes. There has been and there is now no room in Canada for class hatred or for class distinctions. The stress and strain of war has made that lesson all too plain. There is, however, as has been indicated, a certain amount of suspicion in the minds of farmers and it is at once the privilege and the duty of manufacturers and of "Big Business" to demonstrate to the farmers that their suspicions are not well founded. Until this demonstration has been made the development of Canada must stop at a point short of the highest.

CONSIDER FARM NEEDS.

In other words, the farmers of Canada will not heed the exhortation to purchase goods made in Canada till they have some practical assurance that the makers of such goods seriously and sensibly consider the requirements of rural Canala. At this present moment the Canadian farm-

er cherishes the opinion that "big business" and manufacturers stock up with or manufacture goods with an eye to profits rather than for the farmer's advantage. Hence his grim smile when the farmer's loyalty is appealed to for the financial advantage of the salesman. As long as the farmer thinks as he does—and he can give a good reason for the opinion held—it need not surprise anybody when the farmer keeps his pocket buttoned and refuses to have his judgment in purchasing swayed by what he regards as spurious appeals to his patriotism.

It is in place for the manufacturer to approach the farmer in older Canada with the intention of giving him a square deal. For many a day this particular line of trade has been given second hand consideration at best. Towns and cities for at least two decades have been thronged by crowds of well paid artisans and other wage earners who were eager to spend their money as they earned it, in clothes, in home furnishings and in food. Vast numbers were hurrying to the newer parts of the Dominion and each of these pioneers was clamoring for farms and domestic equipment. Railways and mines and timbering and lumbering and milling interests were clamoring for supplies. To all these demands the manufacturers gave an attentive and obedient ear. In the meantime the farmer in older Canada who knew his business was steadily making good. In the interval, too, has come the present financial stringency that has squeezed so pitilessly, newer Canada and Canadian business, to say nothing of the whole business world. The farmer in older Canada remains unscathed and is in possession of the accumulated savings of twenty years . Added to his savings is a good memory and an experience that will make it difficult for him to accept the advances of the men who have ignored him so long or who have given him and his occupation at best but a second place.

CHEAPER POWER WANTED.

The best means of removing the misunderstanding that seems to exist between the farmers and the manufacturing classes is that of the agent who at once understands the goods he offers and who has the confidence of the men to whom he would cater. Along with it must go a first hand study of the farmer's needs. There is the matter of farm power, for an instance. At present the power engines supplied by the manufacturers are too limited in their use to give the farmer the returns he should receive from the investment he has made in such machinery. The engine that does the pumping is of no use for plowing, marketing or for other traction purposes. The auto car is more for ornament or for luxury than for anything else. It is up to the manufacturer to solve this problem. The farmer needs more farm power than can be purchased for a sum in keeping with the returns he may reasonably expect from his business. This need the manufacturers have not met, and the farmer waits with a snug bank account the manufacturer who will supply his wants. The manufacturer, as far as the farmer is concerned, has been content to sit in his office along with his designers and to try to have a fertile imagination take the place of experience that can be won only in the byre and the field. *The manufacturer has not made a business-like effort to meet the farmer's necessities, and he need not complain that his goods are despised when the remedying is in his own hands.*

Not only is there a demand for more efficient power machinery but there is an even keener demand for litter-carrying and fodder distributing machinery, and for machinery that is adapted more widely for root and other harvesting. At present the fault found with much farm machinery is that it requires too much power for running it and that it is far too slow in operation. "I am sure that you find this litter carrier a great labor saver," was remarked to a first class farmer the other day. "Oh yes," he replied, "but I'd have a load of manure out in the yard as soon as I'd get this thing wound up." The farmer complains that he uses his binder for little more than a week in the year. His potato digger is in service for little more than a week. The same is true of the planter. During the remainder of the year his machinery stands idle. It is of no use to say that farmers may combine in the purchase and operation of machinery. This has been tried and so far the trial does not warrant much further experimenting. The element of human nature makes this sort of co-operation very difficult—and expensive at times. In the meantime the manufacturer has failed to solve the farmer's problem as far as machinery is concerned, and the fault is the manufacturer's and not the farmer's.

FARM MACHINERY NOT SATISFACTORY.

The machinery furnished has not proven to be the satisfactory agent it was promised to be. It has turned out to be short-lived in comparison with manufacturer's planer, for example, nor has there been the gain in speed or the reduction of labor hoped for. This added knowledge does not lessen the expense to which the farmer has been put. The old-fashioned silo has not proven to be a success, despite its low first cost. Yet the building of the ordinary cement-silo has proven to be both laborious and costly. These are but a few examples of the ways and means by which the manufacturer may approach the farmer. There is welcome and profit for the manufacturer who will give the farmer and his mechanical needs a first hand and scientific study. In the very nature of the case the problems of farm labor and of farm power will be more acute in the future than in the past. The war has slaughtered thousands of laborers and horses. Home trade will not readjust itself to the requirements of the foreign market for many a day. Labor and power conditions that were bad enough in the past will be aggravated in the future. In the meantime the Canadian and the American farmer will be called upon to feed the world. Surely this will prove to be a golden opportunity for the manufacturer to get out on the right of way to supply the farmer with simple, efficient and economical machinery and power.

Further, the farmer's home is rapidly changing, both in equipments and comforts; women are making the wise refusal to toil at washing and baking and cleaning as in the older and more laborious days. They see that it is not business to save money by doing back-breaking labor only to pay it out in shortened life, curtailed usefulness, and in doctors' bills. Hence the demand for culinary and laundry and sanitary conveniences of every kind. But as yet even the fringe of this business has scarcely been touched.

In both house and field and on the country road there is an increasing demand for facilities for the efficient discharge of farm duties. The farmer and his wife are fully awake to the value of conveniences that insure more and better work and ampler and better returns in money and in comfort.

FARMERS ARE GOOD PAY.

Manufacturers and dealers need not count on bad collections when dealing with progressive farmers. On the other hand farmers are under the impression that there is altogether too large a margin between the manufacturing cost of farm machinery and the price the farmer pays for his machinery. Further, the farmer does not see why he should be called upon to make up this, what appears to him, unreasonably large difference. Again, the farmer feels that repairs come too high. He fails to see why he should pay an agent's large commission on every bit of repairs he may purchase. A little experience with farm machinery demonstrates the fact that the original cost of a reaper or an engine is a small item in comparison with subsequent maintenance. It is up to the manufacture to clear the ground in these particulars, and this seems to be a good time for readjustment.

When properly wrought the country store is an important agent in selling goods. The country merchant no longer grouches at the catalogue houses, but figures on going his city competitors one better. Travelers who have gone into this with live advertising men have found in localities where a proper understanding has been established between manufacturers and rural storekeepers that country stores a little more than hold their own in the sales of the better classes of goods. The cheap and gaudy and tawdry are no longer in demand among farmers who have money. There is a field capable of almost indefinite cultivation.

A wise old writer has said, "A fool's eyes are in the ends of the earth." Has the Canadian business man been guilty of the folly of strengthening his trade at the circumference while it has been weakening at the centre? If he has this is his time to consider if he will not be a wiser man when he makes it his policy to cater to the safe and expanding trade of the Canadian farmer. By so doing he may decrease his sales but his collections will be better. He may not have the reputation for doing so much business, but a foreign war or a panicky foreign tariff will not bring him so perilously near ruin.

P.E.I's. Big Egg Money: By Walter Simpson

Over $1,200,000 for Poultry Products this Year as a Result of Co-operative Egg Circles

CO-OPERATION in production makes it possible to have large quantities of produce of a uniform, good, quality to offer to the trade, and co-operative selling cuts out much of the expense of placing our products where they command the best returns. The experience of farmers in Prince Edward Island during the last twenty years, that they have co-operated in manufacturing, and selling, their butter, and cheese, has been such a success, that they were quite ready when opportunity offered, to extend the idea to other lines. They have recently made a good start in the production and marketing of their poultry products on the co-operative plan.

Eggs are now our largest single article of export, totaling some three-quarters of a million dollars a year, and are still increasing. Besides being the largest, they are also the most profitable, of our productions—as the housing and care of quite a large flock of poultry costs little in comparison with other stock kept on the farm.

Our farmers have wakened up to the possibilities, and the little hen, that was formerly left to look out for herself, and was scarcely considered among our revenue-producers, is now taking a foremost place on our best farms. Eggs for many years were considered a side line, and the hens were left for the women to look after. In many cases they had to scratch for and find their own living, and roost in some old tumble-down shed, or often sought shelter from the weather or their enemies on the branches of an apple tree near the barn. This is all changed now, and the hen has won out on her merits, by attention to business and paying a profit, even under such adverse conditions.

BEATS EVEN FOXES.

To-day poultry is taking its proper place, and getting the attention it deserves as the most profitable producer of food on the farm. The export of eggs to-day totals more than any other single article of farm produce, and with the dressed poultry added—which has recently assumed large proportions — it is estimated will this year amount to the sum of $1,200,000. Nine hundred thousand dollars of this would be for eggs, and the balance for dressed poultry.

There has been a large increase in the value of eggs exported during the year, principally due to the production of more winter eggs that sell for about double the price of those produced in summer. But the increased value of our export eggs this year is very largely due to the co-operative marketing of them through the recently-established egg circles.

Rev. P. P. Arsenault, Mount Carmel, P.E.I. President of the Co-operative Egg and Poultry Association there.

Prof. Crow urged the Ontario fruit growers to a better co-operation if they would ever win out. Co-operation is going to solve much of the producing and distributing troubles of agriculture. Often it is the little places that lead in any new method, just as little Denmark erects a lasting memorial in co-operative effort in production that makes the organized genius of Prussia look small indeed. So Prince Edward Island, the smallest of the provinces of Confederation, has carried out this idea in egg production and marketing to an enviable point of excellence.—Editor.

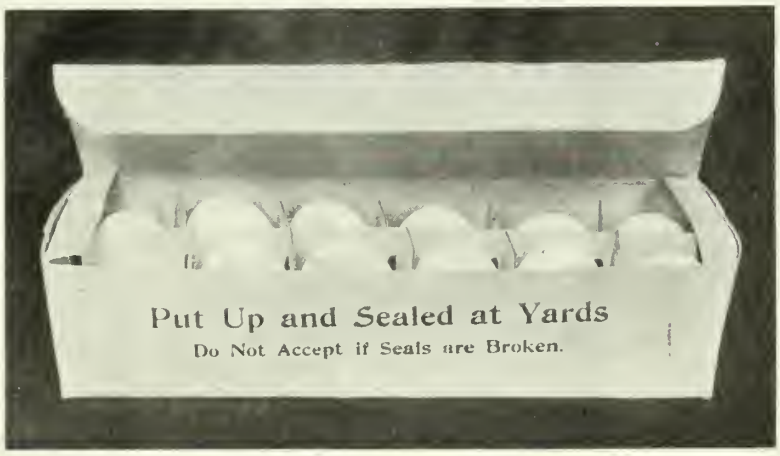
Until about a year ago our eggs were collected by country store-keepers and pedlars, and were marketed by wholesale provision firms in the cities. Under the workings of this system they were retained too long in first hands and by the time they reached the shippers were in a very stale or decayed condition with a large percentage of them unfit for food. Of course, under those conditions, the returns to the producer were very unsatisfactory. The worst feature of this way of doing busienss was that the eggs were bought at a flat rate and there was no encouragement for any farmer to put up and offer a choice article as he had to take just the same for them as the most careless man.

EGG CIRCLES DID IT.

About eighteen months ago, through the efforts of some of our up-to-date farmers, with the help of the Livestock Branch of the Dominion Department of Agriculture, the first co-operative egg circle was formed here and began an export of eggs to Montreal, that were guaranteed to be new laid. These eggs were stamped on the large end with the number of the circle shipping them, and also the number of the individual producer, so that any bad egg that might go forward could be traced directly back to the man who sent it. The eggs were all candled before they were marketed. This at once caused a great change in the quality of the eggs handled by the circle, as a stale egg was graded away down in price, and a decayed one was a total loss.

This system of marketing by getting the quality right gave the producer an increase in price that amounted to a good profit. The success of these first egg circles was so marked that an immediate demand arose all over the island for the organization of Co-operative Egg Circles.

The Dominion Department of Agriculture responded and sent T. A. Benson from the Poultry Branch to assist the farmers in organizing on the co-operative plan, and so well did he do his work that to-day we have about seventy circles, averaging from fifty to one hundred farmers, each shipping to the large Canadian consuming centers, and also to Boston, eggs that are A1 in quality and that give satisfactory returns in cash. The officers of an egg circle consists of a board of directors, usually seven in number. This board elects a president and secretary from their number. They also contract with some reliable person to gather and ship



Here is an idea for Egg shifter by parcel post.

The Egg collecting wagon used in circle eggs in P.E.I.

the eggs, offered by the members. This officer is called the manager, and his duties are: first, to gather the eggs from the patrons, calling at their homes at least once a week; second, to provide himself with a covered spring wagon for the purpose, pack the eggs in good strong cases and deliver them at the railway station. They then go by express to market, and in summer reach Montreal or Boston the day after they are shipped. They are consigned to the dealer who quotes the highest price. Under the old system they were often two or three weeks in reaching the consumer.

A PROVINCIAL ORGANIZATION.

With the large and ever-increasing number of circles doing business, there came a demand for a provincial organization. This demand was met by the organization of the Prince Edward Island Egg and Poultry Association, which is incorporated under our laws. Its membership consists of delegates appointed from the local circles, and its business is largely as an advisory board where questions of management and finding the best markets are discussed and acted upon. Its meetings are held as occasion calls for them.

The local circles hold an annual meeting when the accounts for the year are submitted, after being audited. A new board of directors are then elected and plans laid for future business.

The cost to the patron for the gathering of his eggs and shipping them amounts to about one cent and a quarter per dozen during the year.

One of the first results of the working of the co-operative system was the raising of the price of winter eggs for the producer about 30 per cent., and summer eggs by reason of their improved quality also brought much higher figures than formerly.

This matter of the farmers presuming to manage their own business, as usual, stirred up a strong opposition from the dealers, and every effort possible was made to kill off co-operative marketing, but the result so far has been that the farmers are more than ever determined to stand together, and provide the quality the market demands, and they are satisfied that they will win out in the end, even though traders are trying to break up the new movement by offering, in many cases, more than their markets will afford, to entice us back into their power.

These trust methods for killing out co-operative enterprise among producers are getting to be well understood and farmers know too well how to value the cents, that if taken now would cost them their independence, as well as dollars in the near future.

CANDLING STATIONS.

Two candling stations have already been established by the circles and experimental shipments from these, of select lots of eggs, have been sent forward to new markets in the United States, which have brought very satisfactory returns. Several more candling stations will be established by the circles to enable them to cater to a select trade, which can always be found in large cities.

To insure the best success in this new movement a campaign of education is absolutely necessary, and we are pleased to see that such is being carried on, all the time, by our energetic officer Mr. Benson, who, with his assistants, are untiring in their efforts to educate our poultrymen in the matter of quality of products, as well as in the important matter of standing together in the true spirit of co-operation, which is really the highest business ideal to which the farmers should aim, and which will give them a standing in the community and insure their just rights.

FARMERS PRODUCE WINTER EGGS.

Until lately there were very few winter eggs produced here, and next to none exported. Now we find that it is the ambition of every farmer to have eggs to ship every month of the year. Winter eggs bring almost double the price of those marketed in summer. They cost more to produce, but the margin of profit is nevertheless much larger, if the poultry is skilfully handled, and this skill will soon be acquired by our poultry keepers when good profits are in sight.

Everywhere we go we see modern, sanitary poultry houses being erected. The plan of house mostly in vogue here is for a house to accommodate from 100 to 150 hens, a building 36 to 40 feet in length, and 14 to 15 feet in width, with a shed roof. In front are two windows, and also two cotton hangers 7x7 feet. The two ends and back of the house are made perfectly tight, with wallpaper and shingles. This makes a house without any draft, and gives gentle circulation of the air at all times, so that it is always dry, pure and cool. Moisture is always deadly in poultry houses in winter and results in frozen combs, as well as many other ailments, which take the profit out of the business. Inside, the house is divided into two compartments, with wire or laths. Under this division are two rows of nest-boxes, covered, with a passage-way between for the hens to get to the nest, and a hinged door, which opens up over the nests. Another row of nests along one end, gives plenty of nest accommodation. The roosts are placed along the back, about two feet from the floor. In the corner of one division is a movable pen, made of slats about five feet in length, which is used for setters in season, and cluckers later on, also for a chicken-fattening pen. When not in use it can be moved away to give the hens more room for scratching.

The scarcity of farm labor here, as well as elsewhere over Canada, is compelling our farmers to consider along what lines they can get most profit with the least expenditure for labor and many of them are satisfied that in the poultry business conducted along co-operative lines they have made a long step toward the solution of the problem.

In a new venture such as this where success depends so largely on the education of the people up to the true idea of co-operation it will be necessary to go a little slow at first, and later on extend the co-operative idea till both producer and consumer will be greatly benefited by the elimination of all the middlemen who today are to blame for the much-discussed high cost of living. It would be a great revelation to most farmers to know just what it costs under our trade system to get our products to the consumer. Knowledge along these lines, we believe, would soon result in better systems of marketing farm products that would give the producer a better profit, and also lower the cost of living to the consumer.

Co-operation should be the slogan of every intelligent farmer.

HORSE RADISH WANTED.

The Brtish nation are great consumers of horse radish, and as the chief supplies for this market have hitherto come from Germany, inquiries are coming to Canada as to the possibility of this appetizer being supplied here. There is a chance for Canadian vegetable growers to pay some attention to the cultivation of this easily-grown plant.

The Mother *and* Her Child

The Only Way Whereby the World can be Made Gentle and Peaceful is through the Knowledge of Women in Bearing and Rearing their Children

By DR. ANNIE BACKUS

The following extracts from an address given by Dr. Annie Backus at the Western Ontario convention of Women's Institute have a message which every woman will find worth serious thought. Dr. Backus has been an enthusiastic Institute worker for some time, and in those districts where she has visited as a department delegate, her words will be more than welcome. The treatment of her theme throughout the article expresses something of the force of character behind the thought.

Dr. Annie Backus, a well-known Women's Institute lecturer.

IT is difficult in the present state of national affairs to concentrate our thoughts upon any question but war, the very air seems surcharged with thrilling events, and our anxiety is so great as to the final result of these events, that subconsciously we are waiting and listening for some definite news, this only do we know the world is filled with bereavement, and for years mothers will still be mourning for their slain and maimed children—many Rachels weeping for their children because they are not.

And here is shown the weakness in the management of human affairs, the male element, which is the aggressive, the ambitious, has entire control in public and national questions, and perhaps in no country in the world have women so little consideration as in Germany (the great aggressor of the world), therefore malicious murder and lust and plunder are rampant in the armies of that nation.

Any individual or any nation who ignores the sacred relationship of the mother to her child takes a step back toward barbarianism.

The only way whereby this world can be made gentle and peaceful is through the knowledge of women, and the use of that knowledge in the bearing and rearing of their children: "Ignorance is the curse of God; knowledge the wing wherewith to fly to heaven," writes the great poet, and if there is any case to which this applies, it surely is to mothers. Now perhaps more than ever before is this information necessary; our young men and our strong men are going to the war, many will never return, and those who do, will probably be broken in health, so many of the future fathers will be weaklings, and the children of the future will have to depend upon their mothers for their physical well-being.

TO GIVE THE WORLD A BRAVE AND GODLY RACE, OR A LIGHT-MINDED PEOPLE.

The prolificness of the feeble-minded is so well authenticated that we need scarcely mention it, and the next most prolific branch of the human family is that section only a degree removed in capacity and forethought. The man who has not the ability to provide for his family, points with pride to his unfed and half-clothed offspring as if he had done something for the world; scarcely giving a thought to the worn, toothless, weary mother, because; don't you know? she is the weaker vessel. *The weaker vessel*—and yet through the body of *woman* must come the entire human race. The weaker vessel, and women have the power through motherhood to give to the world a brave and godly race; a cruel and treacherous race, or a light-minded people.

THE LITTLE BLIND GOD MORE POPULAR THAN EUGENICS.

We find in all ages men have made a study of the laws controlling the reproduction of domestic animals, even Virgil dwells at length upon the best method of securing the finest horses, cows and sheep; but so far we have made little headway in the study of how to breed the finest kind of human beings. We do hear afar off a murmur of eugenics, but unfortunately eugenics is a study of small interest to the young—a little god called Cupid rushes in, kicking over all consideration of laws, and without a thought of future responsibility marriage is entered into, and parentage follows, a child is born, and the mother of that child has never been taught that from the first hour of its conception it is in her power to influence it for good or evil all the days of its life.

The Mother and her Child . . . wonderful power for good or for evil. If the mother's thoughts are exalted, and her life protected, the child will inherit that state of mind to its everlasting good. . . if her thoughts are low, and her life full of petty worries such will be the mental inheritance of her child.

Great Men and Their Mothers.

We have no need of any better examples of this law than in the Biblical history of Hannah and her son Samuel . . . Elizabeth and her son John . . . Mary and her son Christ. We quote these cases because their history enables us to learn that which is so often difficult, the state of the mind of the mother during the prenatal life of the child. Follow the prenatal history of these three sons whose lives have done so much for the world's betterment.

Hannah, even before conception vows: "I will give him unto the Lord all the days of his life," and later we read: "Samuel ministered before the Lord being a child;" even in his childhood Godly, no chance work in that.

We read that Elizabeth conceived, and hid herself five months, saying: "thus has the Lord dealt with me in the days wherein he looked on me, to take away my reproach among men," then later we hear, "A voice crying in the wilderness."

Mary the mother of Christ sings: "My soul doth magnify the Lord and my spirit hath rejoiced in God my Saviour." Now whether you believe in the immaculate conception or not, this is the highest instance of the result of the exalted state of the mother's mind upon her unborn child. Here are three cases with which you are all familiar, and if you're not you ought to be.

Another instance and nearer our own time, is that of the poet Gray, the writer of that wonderful poem beginning:

"The curfew tolls the knell of parting day,
The lowing herd wind slowly o'er the lea,
The ploughman homeward plods his weary way,
And leaves the world to darkness and to me."

A poem that General Wolfe said he would rather have written than to have taken Quebec. It is noted that Gray's mother spent hours every day near the very scene of the "Country Church Yard," and during the poet's pre-natal life she gave much of her time in admiring the works of nature, and worshiping nature's God; doubtless in her mute braest were the thoughts and music which enabled her son to sing this sweetest of poems.

The MOTHER and her CHILD! Before husband, housekeeping, or social duties, is the duty of the mother to her child.

To be the child of a good mother. What an inheritance!

To be the child of an intelligent mother. . . . to think aright!

To be the child of a brave Mother, to be able to do the thing that is right and honorable at any price, Oh Mothers of England, Mothers of Belgium, by their children's deeds you shall know them.

Apples, Livestock and Celery

What Progressive Farmers are Doing to Increase their Returns

THIS year apple-growers have had ample opportunity, because of the low prices, of looking their business fairly and squarely in the face.

Do the people of Canada want apples as a regular part of their diet? Are our own people eating enough apples?

Early in the season, the Dominion Government, in order to encourage the sales of apples advertised in the press of Canada to the extent of about $12,000. The result may be gauged from the fact that the department received some 36,000 letters of inquiry from Canadians mostly in cities, as to the way of receiving apples, and as to the way to get them.

This establishes two things. Our apple-growers have taken it for granted, that they did not need to advertise, and also that the people in the cities want apples and would buy more generously if they were given a fighting chance.

There have been some queer ideas current in city homes. They read in the daily press in many parts that apples should be landed in their cellars for $1 a barrel. When they are met with demands for $2.25 and $3.00 they immediately go up in the air about it. The facts of the case are well given by an example in the city of Ottawa. Apples were bought at 40 cents per 100 lbs. delivered at the shipping point from growers 100 miles away. These were put into an ordinary box car, padded on the bottom and sides with straw and shipped to the Capital City. Here men were hired at 2 cents a bag to bag them in cheap sacks costing 5 cents each. Then the apples were delivered by drays to the parties who had asked for them in response to an advertisement appearing in the previous day's papers. The price paid was 65 cents a bag. These apples were Northern Spies, Baldwins and Greenings. It is said that they carried very well and satisfied the demand from a class that ought to learn the value of this fruit in their daily fare.

And there always will be a big urban class ready to absorb fruit shipped in in this manner at a low cost. But it cannot be expected that fruit-growers are going to raise good apples long at such a low price as 40 cents a cwt.

Let us look at the expenses of packing and shipping in barrels. The fruit-grower picks his apples for 15 cents a barrel; the barrel cost 50 cents; the express or freight for 100 miles will amount to about 30 cents a barrel; delivery in single barrels will be extra; advertising will cost something. So that the total of expenses will be $1 a barrel before the farmer gets anything. Good apples should net the farmer at least $2.00 a barrel, that is for No. 1's and No. 2's in an average year. This puts the consuming price at $3 per barrel in the city centres.

Nevertheless the big bulk of the wage-earning class will not pay $3 a barrel for these apples, consequently they go without them. The whole question resolves itself in a cheaper package and a possibility of sending apples in to these centres in bulk so as to supply such a demand.

Enough urban people know the value of No. 1 Spies and Baldwins well enough to pay the $3.00 for them. They want quality and a guaranteed pack.

With a future of many apple plantings in Canada before the apple-growers, it becomes a searching question to them to find out new markets and to educate people into a proper appreciation of our domestic fruits. During the last ten years the consumption of apples by Canadians has not increased, but the consumption of foreign fruits such as banans, pines, grape fruit, Malagas, etc., has increased 35% per annum.

This is all the more imperative from the fact that the apple trees of Canada are not as yet one-half in bearing condition.

Nova Scotia has half her trees bearing. Her apple area is about 100 miles by 6 miles.

New Brunswick has a big planting in the St. John Valley. Quebec has many acres of Fameuse and McIntosh recently set out. Ontario has 10 million apple trees with about half bearing.

Practically two-thirds of British Columbia's trees are under 5 years of age. And the north-west states of the United States already produce 15,000 cars annually and are only treading on their possibilities.

North Battleford Livestock

THERE is an association in North Battleford, Saskatchewan, that is giving considerable benefit to the farmers near there. They have demonstrated beyond question the benefits to be derived by farmers themselves from a wise co-operation in buying and selling.

The North Battleford Livestock Association is a joint stock company formed by responsible business men in North Battleford for the purpose of furnishing industrious and trustworthy farmers with the nucleus of breeding stock. Purchases are all made through the Department of Agriculture, and in this way the quality of the stock is assured. Responsibility for the selection of credit risks is assumed by the association, and the animals are sold to the farmers at a small advance on their cost to the association, the difference going to pay operating expenses and to create a reserve fund against occasional losses. Farmers' notes given in payment for livestock are endorsed or guaranteed by the association and discounted at the local banks.

In financing this particular movement the banks have been influenced by the view that if it should prove a success at North Battleford, an important development would be likely to follow at innumerable other points—indeed there are already indications of such a development. When this comes about, however, other machinery will, doubtless, have to be provided, for the reason that the capital required to enable small farmers to go into the livestock business could not in the nature of things be repaid within the period of an ordinary banking transaction.

This North Battleford Livestock Company distributed stock in this district as follows:

116 head of cattle, value...	$11,599
502 head of sheep, value...	3,316
Total	$14,915

It is estimated that in addition to this stock about 150 head of cattle have also been imported by private parties as a direct result of the campaign instituted by this company. The total results, direct and indirect, may therefore be put at from $25,000 to $30,000 worth of stock.

It has been found that a large percentage of applications for stock are received from homesteaders and the poorer class of farmers. In many of these cases proper accommodation has not been arranged for the satisfactory housing of the stock, and as this is one of the chief points considered in deciding upon the merits of the applicants, it has been found necessary to withhold a large number of applications pending satisfactory arrangements being made along this line.

The board of directors are unanimous in the opinion that applications for stock next season will result in a much larger distribution, as the scheme is growing in favor throughout the whole community, and the aim of practically every farmer in the district appears to be to get into mixed farming with as little delay as possible. There has in the past been a certain undercurrent of feeling amongst the farmers that the shareholders of the company had some ulterior motive in view, but this feeling has about disappeared, and those farmers who have already pur-

chased are now the best advertisers of the scheme.

The scheme is no doubt, a sound one for the banks and business men of that progressive town. It is being proven beyond cavil now, that the local and tributary trade is of immense importance to a commercial center, and the returns that will be reaped by the business men will amply repay the encouragement they are giving. There is no reason why farmers and the local business men should not work together in this laudable manner. Each can help the other. Distrust of one another would pass away when a perfect understanding is reached. The farmer prefers to buy in his home town where he is given service. If every town merchant were as alive as some of these in North Battleford there would not be so much business for the mail order house in the distant city. Local patriotism is wanted in merchants and farmers alike. Then local business and farm properties would advance rapidly in value.

Controlling Celery Blight

Good Profits from Growing Celery where Blight is Beaten

THE growers of celery lose thousands of dollars annually because of the celery blight. In Ontario the main growing districts lie around Toronto and London.

During the past year, the Ontario Department of Agriculture, assisted the growers by experimenting on several patches with different spray materials. S. C. Johnston, of the department, had the matter in charge. The results, while they show some queer departures, are on the whole conclusive of the benefits of careful Bordeaux mixture spraying put on with a fine spray nozzle, with plenty of force behind it.

These spraying demonstrations were conducted under the department at several places near Toronto and near London. Spraying was done every week in most of the cases, from the time the plants were out of the ground, until September. The 4-4-40 Bordeaux mixture was used and seemed to be the most satisfactory, although it left a bluish color on some of the leaves. This, however, would not injuriously effect the consumer, as Mr. Johnston says, one would have to eat twenty-nine pounds of celery to get even a tonic dose.

In one case near London consisting of 6½ acres, the spraying was totally unsatisfactory, and the whole crop was practically valueless because of blight.

In other cases where the four check rows were left in the center of a field, these rows were found to be from 50 to 75 per cent. unsaleable, while immediately adjoining rows in the sprayed portions were free from blight.

Sime Bros., of Mt. Dennis, reported a very successful season where fully 95 per cent. of the celery was marketable.

In some cases the check rows showed no infection as late as August 1st, but by September 1st they were covered.

John Reeves, of Humber Bay, had a striking example in his work. From the sprayed rows he realized $50, while from the untreated ones he secured only $10 and had double the labor in trying to reach this low return. There is no question in his mind of the benefits of spraying.

Prof. McLennan, of McDonald, is of the opinion that blight is largely due to a setback given the growing plants during the season. They are unable then to throw off the infection and so succumb. This view was partially substantiated by Mr. Reeves in that the only blighted portion of his annual crop, occurred on an old roadway where the soil was very thin.

Lime-sulphur solution has not given the same good results that the Bordeaux has. The former was thoroughly tried out at the Ontario Agricultural College during 1913. The copper-carbonate solution did just as good work as the Bordeaux. It leaves no trace upon the leaves or stalks and for that reason is favored by some of the growers. It is not as satisfactory to the sprayer in that he cannot see where the spray material has gone, and often this is a decided disadvantage. When the vision is satisfied it is more often likely to be satisfactorily done.

The cost of spraying with a power sprayer covering three or four rows at a time does not run over $10 or $15 per acre for the season. This is a very cheap insurance indeed for an acre of good celery will often yield the grower $800 to $1,000.

Lime is used by some gardens. This is purchased largely in New York state and applied with a shovel. The chief action is to correct the sourness in the soil. Salt is also used by many as a decided strengthening agent for the growing plants. As the celery plant is a seaside plant, says Dr. Malte, Dominion Agrostologist, the presence of salt is likely one of nature's requirements for the plant.

The Guaranteed Ghost: By Alan Sullivan

Illustrated by Mary V. Hunter

WANTED, FOR WINTER MONTHS, OLD English house, within 100 miles of London. Must be guaranteed to be haunted. Terms not important, if entirely satisfactory. Send full information to Mrs. Elihu Perkins (of Perkinstown, Iowa), The Cecil Hotel, London.

COLONEL STUDHOPE, D.S.O., P.Q.R.S., retired, raised his eyes from his copy of the *Morning Chronicle* and stared across the breakfast table with blank amazement.

"Really, my dear, what extraordinary people Americans are! Just listen to this:" He then read out the advertisement in a full, throaty and somewhat apoplectic voice, and continued: "I have always thought they were mentally quite different from ourselves; now I am quite sure of it. The idea of any one actually wanting the unhealthy environment of a haunted house! It is quite evident that the mixture of races in America has produced an—er—an irresponsible class of people."

Eva Studhope, tall, very fair and twenty-three, leaned forward, Her eyes were twinkling, "Father! you're joking."

The colonel's brows contracted. "I regret to say I'm not. Look at it. I'm surprised to find such a respectable paper lend itself to transatlantic vagaries."

His daughter tilted the *Morning Chronicle* against the tea cosy and surveyed it with absorbed interest. Automatically she refilled her father's cup and automatically returned to her scrutiny. Moments passed. The colonel, recovering from the outrage, resumed his toast and marmalade. Presently the silence reached him across the breakfast table; also he missed the *Morning Chronicle.*

"Upon my word, Eva, you find the paper very interesting."

She nodded, looked at him curiously and remarked impersonally. "Pater, how long have you been trying to let The Beeches?"

"Why do you ask?"

"Never mind. How long?"

"It will be two years on the fifteenth," conceded the colonel with military exactness. "But you—"

"And if we don't let it by October, we close up, get rid of the servants, rent the lodge to the new curate and take rooms in Bournemouth?"

Her father nodded. The subject was distasteful. A man who had served his country for thirty-five years should not be exposed to possible penury, but that was what had overtaken the colonel. By now he almost ceased to regret that his wife had not survived the fever of the Bengal plains. He numbered the days that remained till October should dispossess him; then he set his jaw and looked pinker and chirpier and younger than ever.

"My dear," he said steadily, "I have made every effort to dispose of The Beeches. I find, unfortunately, that a later generation does not appdeciate sylvan beauty. It seeks other and less refined diversion. So the only thing to do is—" He stopped abruptly and regarded the marmalade with intense resolution.

Eva's lips twitched and her eyes roved across the top of the *Chronicle.* "If this house were only haunted," she said impersonally, "we—"

"But it isn't," snapped the colonel. "The drains are perfect."

"Suppose," went on Eva impressively, bayonetting him with her exquisite, blue eyes, "Suppose that we were suddenly to discover that it was haunted!"

Her father abruptly put down his cup.

"God bless my soul," he said, staring at her.

"You see," she continued, "there are several essentials that go with every properly equipped haunted house. There is the long panelled hall at the top of the main staircase. There is the secret door, and the underground passage. Do you realize, Pater, that we have at The Beeches what Mrs. Elihu Perkins would probably call the 'whole contraption'?"

The colonel grew slightly purple, and exploded: "Don't be a fool, girl!" Then he added, triumphantly, "What about the ghost?"

Eva Studhope got up and approached her father. Then she stooped over him and kissed the highest and pinkest spot on the dome of his shining skull. "If you will come into the garden for about half an hour, Pater, I will tell you more about the hereditary ghost of The Beeches than you ever dreamed of."

* * *

Two days later, Mrs. Elihu Perkins was reading letters in the sitting-room of the most expensive suite in the Cecil Hotel. She was large and good-natured. Her dress betrayed the recent acquisition of much wealth. She had restless eyes and a mind that for years had oscillated between Christian Science and vegetarianism. Of late she had been under the hypnotic spell of the Spiritualists. Just now she was poring over a letter which bore the postmark of Salisbury. Presently she raised her voice:

"I guess I've got it this time, Henry."

Someone in the next room was whistling. The whistle ceased. "What's that, Mother?"

"I guess I've got it. This seems quite complete. Come here."

Henry Perkins strolled amiably in. Whatever physical vagaries were collected in Mrs. Perkins' maternal frame had been overcome, so far as Henry was concerned, by the late Elihu. Henry in fact, presented that example of sudden reversion to type so frequently found in the children of American parents. He was tall and dark, with quizzical mouth and eyes, and an irresistible gaiety that bubbled out continuously and inconsequently. Mrs. Perkins worshipped him whenever she was not engaged in devotions to the spirits.

"Well, Mother, who is it this time, Thomas a Becket or Mary Queen of Scots?"

Mrs. Perkins flushed. "Don't be foolish. Listen to this." Then she read:

"Dear Madam,

"In answer to your advertisement, I am sure our house would suit you admirably. It is called The Beeches. We are just two miles from Salisbury, which is 80 miles from London. The house is Elizabethan, and very old. The grounds are about 10 acres. The ghost is a lady. She appears in the long hall at midnight, on the fourth Monday of every month. She is very tall, but we have never seen her face, which she keeps covered with a white cloth. She wrings her hands for a few moments and vanishes. There is a story that she is lamenting a lover who disappeared when Cromwell's armies were fighting in the south of England.

"The house is open for inspection. We ask thirty pounds a month, furnished. I hope this will be satisfactory.

"Yours sincerely,

"Eva Studhope."

"The reason I like this," continued Mrs. Perkins firmly, "is on account of the ghost's habits. In practically every other offer we've had, they appeared on one of two nights. The English ones all showed up on Christmas Eve, and the Scotch ones on New Year's Eve. There's a good deal of entertaining done in Scotland that night. They drink in the New Year, and I guess that's what wakes up the ghosts. Now this one has some system and method. It's perfectly plain, and we can make all our arrangements accordingly. I guess we're booked for The Beeches. I don't know but what I'll let the Occult Society in on this."

Mrs. Perkins was above all things prompt. Eva Studhope was advised by telegram, and at noon on the following day, Henry's six-cylinder car sent the gravel flying on the drive that terminated at the front door of The Beeches, a little over two hours from London.

The colonel was extremely dignified. In his erect and immaculate portliness might have been discerned the highest interpretation of the retired officer. If there was a shade of condescension in his manner, only Eva noted it. He felt, now the hour struck, that he was doing something Olympian in surrendering an Englishman's home. Mrs. Perkins saw through him at a glance, but such were the charms of The Beeches that she capitulated on the spot. The panelled hall was what she had seen in many a dream. And the ghost—was not the ghost guaranteed by people whose word it was impossible to question! Henry glanced curiously about as they went over the house, which to him really did not matter much. The roads were excellent for motoring. Once or twice he found himself staring into Eva's eyes, which immediately resolved themselves into large, calm, blue lakes, whose depth baffled him. He was distinctly relieved when the colonel said they had changed their plans, and, if The Beeches was let, would occupy the Lodge for the winter.

Henry had noted the Lodge, a hundred yards from the big house and buried in trees.

"You see," said his mother to Eva, who surveyed her gravely, "We have no ghosts in America. I guess the country's too young, and not mildewed enough. I'm lady chairman of the Perkinstown Branch of the Columbian Female Occult Association and the members just made me promise some personal experiences when I got back. Now, Colonel, if you say you've got the real thing, it's a bargain."

Colonel Studhope coughed slightly, grew a trifle red and said firmly, "We have, Mrs. Perkins, the real thing." He signalled, imploringly, to his daughter.

"If we haven't, Mrs. Perkins, you can have your money back," put in Eva, with dignity.

Henry glanced at her curiously. The color was rising in her cheeks and her eyes were bright and restless.

"I am a student of faces,' said Mrs. Perkins, with dignity, "and I see that yours are those of people who have lifted the veil. The matter is settled."

"There is just one thing," went on Eva, her voice rising a trifle uncertainly. "You must promise not to interfere with the ghost. They are not used to it, and we know they don't like it. It might never return, and then, if any other members of your society were to come over here, the charm of the place would be gone."

The new tenant shivered with delight. "How perfectly lovely. That does bring it all home. Of course I promise, and you too, Henry?"

"Of course. I won't be tempted. I'm willing to promise anything," he added coolly, with a sudden glance into Eva's eyes.

It was a matter of sincere regret to Mrs. Perkins that all this occurred on the first Monday of the month. It meant that there remained three weeks to be put in with not a thing going on. Halfway back to town, she was surprised at Henry suggesting that they move at once to The Beeches. He had developed such a joyful appreciation of London amusements that she had, as a matter of fact, been moved by secret fears that he would revolt at being buried in any country house, however memorial and haunted. Now she surveyed him with amazement.

He was at the steering wheel and his gaze was fixed studiously exactly one hundred feet ahead of the car.

"I'd like to see something of the other side of English life," he went on, with a touch of nonchalance. "We could live at the Cecil all winter and know no more of England than a bluepoint oyster. Do you suppose his royal highness the colonel will loosen up?"

His mother looked at him shrewdly, but gave no sign of newly wakened suspicions. Instead, she looked peacefully at the sliding landscape and said thoughtfully: "Whatever it is, Henry, something tells me that it's going to make a great difference. I felt almost translated this afternoon in that old place. I wish your father could have seen it, but he would have missed the radiators. I guess we'll miss them too." She put her hand on his arm. "Do you realize that we're going to line up with a real ghost?"

During the ensuing fortnight, several things might have been observed at The Beeches, but the most curious was the frequent appearance of a wheelbarrow that emerged from the back door of the Lodge, burdened with rubbish. No one regarding the shining exterior of that diminutive dwelling could have imagined such an accumulation. Another curious matter was the frequent appearance of the colonel at the same door, covered with dust and cobwebs, through which his ruddy face glowed with tempered but continuous protest. Eva, furthermore, might have been noticed, looking, as usual, distractingly beautiful, but with the added charm of subdued mirth in her large, blue eyes. The village grocer remarked with satisfaction that whereas formerly the Studhopes used three pounds of candles a week, the consumption had suddenly risen prodigiously. Over and above all this there was nothing more than usually happens when a retired colonel and his daugh-

ter move from their house across the lawn and into the Lodge.

The new tenants definitely arrived on the first Monday of the following month. They were preceded by a van containing a number of those large and massive structures known as American trunks. That evening every room in The Beeches was lighted, it being generally understood that Mrs. Perkins was bracing up for the coming ordeal.

It is without question a remarkable thing to observe how often those who are supposed to be well informed and independent, fall to the ground. Eva Studhope was forced to this conclusion in the case of Henry. He appeared at the Lodge at most unexpected moments to ask for information which often seemed trivial compared to the earnestness with which he sought it. He was curiously helpless about roads and distances. He seemed fired with the desire to scour the country, but for three days his speedometer did not register a single mile.

Eva smiled through it all, then, at the end of a cross examination about the route to Bournemouth, she said suddenly: "Why don't you go? It's only forty miles."

"Is that all?"

She nodded: "Its perfectly simple. You found your way here from London without trouble."

His lips twitched: "It's easier to get here than to leave," he said daringly.

"Mr. Perkins!"

"It would be perfectly simple if you'd come. We could be back in three hours. If you were in America you'd come."

"Oh, would I?" Her brows wrinkled.

"Yes, you would," he went on stubbornly. "And your father wouldn't mind either. Don't you trust me?" He stared at her.

Eva grew very pink. "It isn't a case of trusting you, only—only—we don't do it over here—and—I do trust you."

Henry lit a very expensive cigarette and made small and very perfect rings of smoke. "Ever been to Bournemouth?"

She shook her head.

"Like to go?"

She counted seven rings, then nodded almost imperceptibly.

"Can you be ready in half an hour?"

"Mr. Perkins," she said sweetly, "I can be ready in exactly thirty seconds."

Henry turned without a word and darted up the drive toward the stable. "And I thought the English were slow," he panted.

Half an hour later they were gliding through the exquisite aisles of the New Forest. His eyes roved from their beauty to the pink flush on the girl's cheeks. It was her first motor trip. She was in ecstasies.

About that ghost," he said suddenly.

She started, "Yes, what about it?" There was a quaver in her voice.

"Have you seen it often?"

Eva turned. She was apparently lost in the charms of the New Forest. He could only see the back of her head. "Yes, often," she answered slowly.

"What is she like?" persisted Henry, throttling down his engine.

"She's—oh—she's tall and fair. That is, she would be fair, if she weren't so ghastly white."

"Is she beautiful?"

Eva hesitated. "Some people might call her that. You see it's very hard to tell, because she generally has part of her face covered."

Henry looked at her steadily. "Does she frighten you now?"

"N-o-o, not exactly; she makes me feel queer."

"And she's lamenting her lover—that's what you said in your letter?"

Eva nodded. "Yes, I know I said that. It's either that or else she's lamenting that she never had one. We got both stories—and—and—I hope you don't expect us to prove it, because it's so hard to get perfectly reliable information about a ghost."

Henry chuckled. "Of course not. I think," he added slowly, "that you're doing mighty well as it is."

She glanced at him suddenly. "And she will appear—let me see—next Monday night?"

Eva gulped. "She will," she said firmly.

And though that was all he said on that particular subject, Eva Studhope, when she climbed into bed after one of the most delightful days of her life, lay for hours staring at the moonlit ceiling, and bombarding herself with innumerable unsatisfactory queries.

At five minutes before midnight the long panelled hall at The Beeches stretched very silent in the glimmer that came through the great window half-way up the staircase. At the far end was a very short turn that led to the blue bedroom, so that, from the stairway, or indeed from almost any part of the hall, the door into that particular room was concealed. Mrs. Perkins had the red room, the first on the right. The one opposite was Henry's.

At three minutes to twelve, a very slight creaking came from the room on the right. Mrs. Perkins' door opened slightly and she emitted an awe-struck whisper.

"Are you there, Henry?"

The opposite door gave a subdued scrape, and Henry's head protruded.

"Yes, Mother, all right. Three minutes more."

"Isn't it marvelous to—oh—what was that?"

"Be quiet, Mother. It was only a rat," hissed Henry.

Mrs. Perkins was stricken with fear: "Mercy, who'd have thought!"

"Steady, Mother, steady," breathed a voice. "You'll spoil it all."

Mrs. Perkins braced her palpitating spirit. The moon slid behind a cloud and only the faintest gleam came throught the great window. The far end of the hall was invisible. A thousand little whispers of the night became audible, and the old house seemed in a moment tenanted by something more than memories.

Presently at the far end of the hall came the faintest of faint sounds. Henry gulped, caught his breath and opened his door a fraction wider. Then very slowly, near the door of the red room, a something became barely perceptible and very

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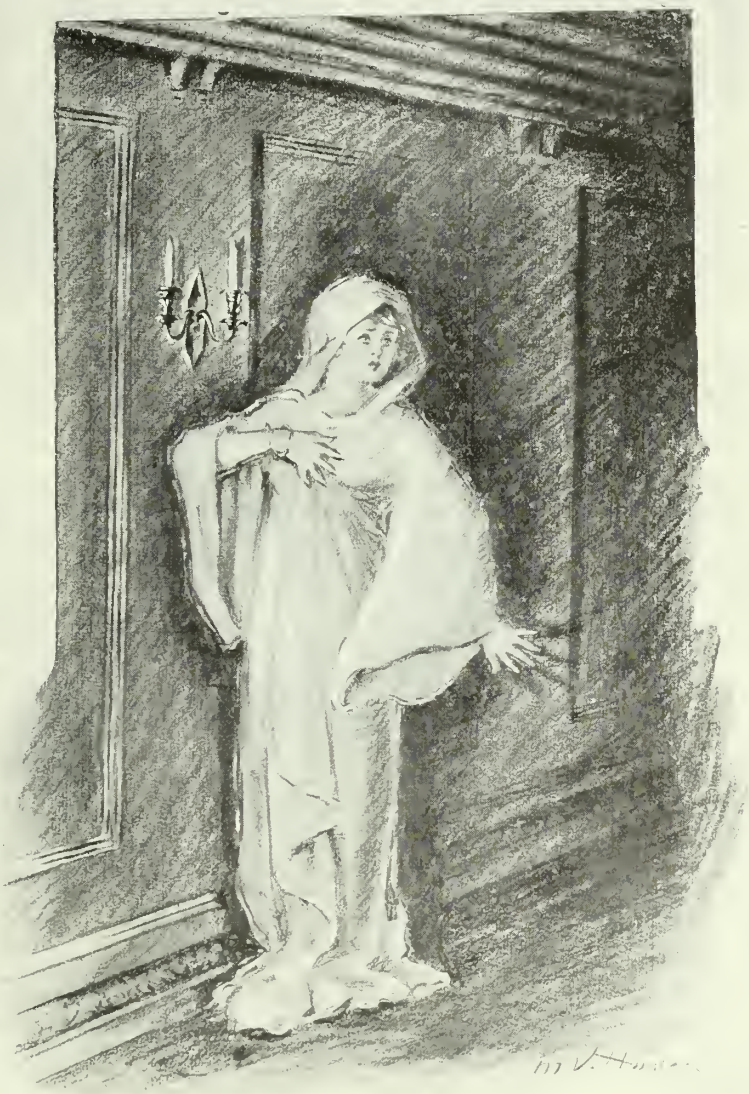


At the same moment came a click from the small table and a blinding flash of light that pierced every cranny of the hall. In this glare he caught a glimpse of a chalk-white face, wide blue eyes and outstretched hands.

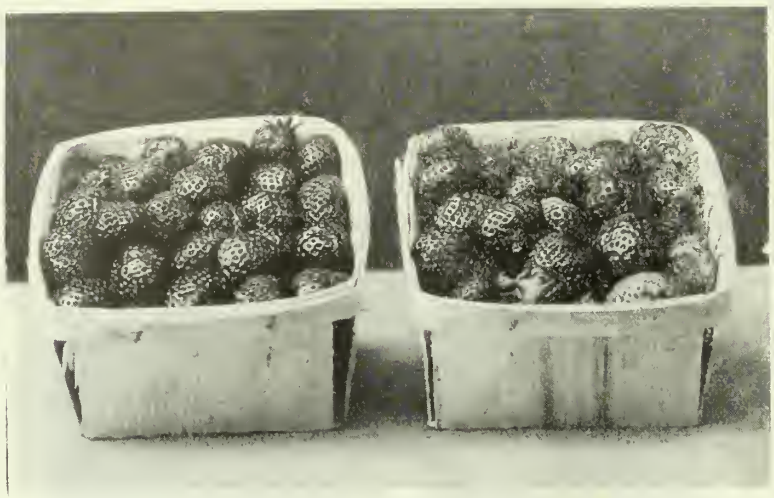
$13,000 From Strawberries:

By BLISS M. FAWCETT

How Six Farmers of New Brunswick Made and Marketed that Amount Last Year

PERHAPS in no spot in fair Canada can strawberries be grown as successfully as near the town of Sackville, New Brunswick.

We read of the delicious apples, pears, peaches, grapes, etc., that are grown in Nova Scotia and Ontario. While our climate is not hot enough in New Brunswick to grow these fruits successfully, except apples, yet it is quite widely known that the town of Sackville takes the palm for the flavor of its strawberries, and the quantity that can be produced to the acre.



That there is money in intensive farming is made plain by this very practical article by one who is probably the biggest strawberry grower in Canada. He is a familiar figure in all New Brunswick farm gatherings. The above photo is one from the sister province of Nova Scotia, and was taken on October 1st, near Bear River, by R. N. Harris. They are a fall-bearing variety, some of which are coming into prominence in other parts of Canada.—EDITOR.

One reason these farmers have made a success of the business is that the soil is sandy. The winds from the Bay of Fundy always cool, the moisture always enough, while its people, men, women, boys and girls, are workers and ready, if need be to work from twelve to fourteen hours a day in strawberry season.

We have no strikes or disputes. Necessity calls us to stay at home and attend to our business. We hire country boys and girls to pick the fruit, who are accustomed to warming their feet in the early mornings where the milk cows lie over night.

We have tried the city youngsters, but they don't stick to the job. They want six hours a day and two hours at noon to swim. That won't work when tons of berries are waiting to be picked.

If you are afraid of soiling your hands or bending your back or hard work and long hours, in strawberry season, don't plant strawberries. Perhaps no other line of agriculture requires as much preparation or thought or has as much complication to bring a profit back to the grower as the producing of a strawberry. We have seen many people try it, who after a short time have given it up because it required him to carry the hoe from April to December.

We have been growing this fruit for a number of years and only the last five have we made a success of it.

The old adage says: "Experience is a good teacher, if it doesn't cost too dear."

Plant on sandy soil, sloping to the sun if possible. Commence on a small plot of rich garden. Plow into ridges, five feet from furrow to furrow, have them well crowned to prevent water or ice forming on top. Plant the vines in one row on top of the ridge nine inches apart. Keep weeds well cut out until the vines have spread thoroughly, when the weeds will be crowded out.

There are 600 different varieties which you can get the names of by sending to the Experimental Farm at Ottawa. The varieties used largely in this sections are Glen Mary, Wm. Belt, Dorman, Wilson and Senator Dunlop.

Never plant on soil that has not been out of sod for three years at least or grubs will destroy the young roots. Land that has been heavily manured for turnips or mangolds or carrots is preferable. New manure used the same year of planting should not be put on as clover and other grass seeds are in the manure. Commercial fertilizers are good when used with barnyard manure of the year previous. Ashes or bone meal are also excellent to add once a year.

The greatest care must be taken to have land well drained. Ice lying long on berries will surely kill them. It is not advisable to plant on low flat soil or heavy clay, although some years with an easy winter and heavy covering of snow they may survive.

Cover the plants with straw or old hay without seeds, after the land is frozen hard, and remove it in spring after shoots begin to appear. Brush is very largely used also to hold the snow. The worst time to overcome is the thawing and freezing that takes place usually in March and early April.

Always plant as early in the spring as a horse can get on the soil. The last of April and early May is the proper time. Frosts do not hurt them after planting. After the hot sun and winds of June the young plants will not live if planted at that time.

One of the hardest parts of the job is marketing. Strawberries will not keep fresh long, and therefore need to be handled quickly. To do this right every person engaged must attend to his job.

The pickers must be careful not to crush the fruit or pick too green. Every box wants to be full and crates made exactly to fit. The boxes and crates must be handled carefully.

One great reason that people get tired of the business is the expense the first year and the liability of winter killing the patch.

Plants cost some $4 per thousand, and to do a good job it requires 12,000 plants to the acre. Then the cost of planting by hand, holing, fertilizing, covering, picking, shipping, etc., piles up the expense. But with careful attention from $300 to $900 can be produced from an acre of land. The man's faith returns then.

One great drawback in the business is the speedy transportation to the large markets.

Berries will keep a week in iced cars and arrive 1,000 miles away as fresh as when they left the vines. In Florida very large areas are grown and provision is made to carry the fruit to the large markets daily in large refrigerator cars. This only needs to be worked up in Canada.

Florida growers have their berries fresh and rosy on the New York, Boston and other markets. The berry produce of Canada could be quadrupled and placed in the large centers of Canada or United States where they cannot grow these delicious fruits so easily.

This town of Sackville shipped in July, 1914, fifty tons of strawberries that averaged thirteen cents a pound on the cars here. These brought $13,000. They were all grown by six farmers. If we had ten times that amount the markets of Boston and New York would have given a larger price. The quantity was too small for them

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The Senator Dunlap, a successful variety in New Brunswick.

Ten Children and $45,000: By F. C. MacKenzie

Manitoba's Debt to Iceland. Big Farmers Who Believe in Education, Acetylene, Gasoline, Livestock and Summer Fallow

In traveling through the Western provinces last summer, the editor was impressed with the progressive farming of some of the new Canadians, especially the Icelander. It is a matter of no little importance that these people who are so splendidly helping to develop the resources of our prairie provinces, and whose children will in a few years be among the people of affairs of the country ,should set a high value on education and wholesome living as well as up-to-date agriculture.

"CAN a poor man make good in Manitoba, Mr. Bedford?" I asked Manitoba's genial Deputy Minister of Agriculture.

Make good! What do you insinuate, sir? he tartly rejoined.

I mean, is there a chance for a young farmer without money and influence, to become independent on these older prairie lands like yours."

"Oh! Why now I see," and the long slender form of the ex-professor relaxed into that inviting 'come-in-and-see' bonhomie, that further introduction was unnecessary. "The province of Manitoba excels in just such opportunities. The land is full of living answers to your query, Mr. Editor."

"The complete story of successes in Manitoba would fill a library. I have here a booklet, which illustrates exactly what you are asking," and a small brochure entitled Manitoba. True Stories of Success in Farming told by the Men Themselves was placed in my hands.

A glance over the contents soon revealed from the forms of currency quoted, that it was intended for Great Britain's consumption. How Englishmen, Welshmen, Irishmen and the Scotchman had made good, were indeed stories that would arrest anyone's interest.

"But sir, there is something else I want to know. These Britishers' stories are all right, but what about the other fellow? John Bull's sons generally can make good, what I want to know is, have you any foreign blood that is coming in and under the handicaps of language, poverty and ignorance of farming methods making citizenship as good as ours."

"Yes sir, you must mean the Icelander! He is par excellence our most enterprising fellow. You should go and see them for yourself out on the farms. Here in Winnipeg they have made good.

AN EXCELLENT FELLOW.

"Yes, go out to Glenboro Bree, Baldur and Lake Manitoba and you will see for yourself what the Icelander can do with our prairie soil, and better still, how he is building flaxen-haired boys and girls into Canadian citizens that are going to lead," said the Deputy Minister, anticipating my question.

The next day found me in Baldur, a modest village in the heart of a fertile sonuthern Manitoba district. I had understood that one of the leading men of the district was Chris. Johnson. I soon met him at his implement warehouse.

Chris. was a big fellow. This manner invited congeniality at once.

"I suppose Mr. Johnson you are not any relation to Tom the hero of centre Winnipeg in the recent legislative election?"

"Only a brother, Tom was the youngest of our family. I am the eldest. Upon me fell the brunt of educating my father's big family."

"Well you seem to have done pretty well, sir! I hear that Tom is well supplied with this world's goods, and you yourself must have considerable land."

Oh! I don't know, we manage to get three meals a day. My 880 acres here are not too bad."

"How about your people? I hear they are very prosperous people and are making good citizens!"

"Yes that seems to be the impression gained for us, but I do not know that we are doing any more than many other foreign peoples. We seem to have the name and somehow it sticks to us."

"Well it is not a bad reputation to get."

"Back at Glenboro, and at Bru, you will find some of the finest farm homes in Manitoba. Icelandic farmers there all have big bank barns, modest up-to-date houses, and lots of livestock. We believe in livestock you know, for that was our most important occupation in Icelandic home farms.

"Bru you know means bridge in English. The language you can see, is from the same parent stock as yours, and it comes easy to us."

One could easily believe it for Mr. Johnson showed great fluency and possesses no betraying accents in his ordinary conversation. He sat down on a riding plow seat and with his foot dangling over the sulky wheel, told me a great deal of the story of Manitoba invasion by his compatriots.

The flaxen-haired children are among the most attractive features of the Johnston farm.

In the year 1874, five Icelanders made the trip to Canada as an experiment. One of these was Mr. Johnson. They located first near Kinmount in Ontario, and from there migrated to near Lake Manitoba. Two are still there, while one got the wanderlust and went on to the Pacific coast, just as many Canadians have done. The fourth one has joined the silent majority.

In 1879 Mr. Johnson got a homestead, and by living cheaply, wasting nothing and yet being alert for every productive expenditure of energy and cash, soon began to make things come his way.

KEEP MANY LIVESTOCK.

He made it a point to keep plenty of livestock on his holdings all the time. Cattle were his particular favorites, still hogs were always present and the goldenhoof also could be seen on some part of the section. Shorthorns are especially favored, especially the beef types as one would expect from the homeland necessities of the case.

Horses are well kept. The Clydesdale leads in point of numbers with them and they generally have some sleek, big draughters for sale. A few Percherons are also winning favor on their farms of late years.

The Hackney, good, strong-boned, big fellows are appreciated and have been bred successfully by many at Bru and Glenboro as well as around Baldur.

The keeping of livestock has no doubt contributed largely to the success of their agricultural operations for one can hardly fail to make good where an intelligent interest is taken in animals. The returns in manure, go to increase the soil fertility. Manure spreaders are used on nearly all their farms. The manure is put on at the rate of four to six tons per acre.

They cultivate the soil well. In fact there is no better insurance of good crops in Manitoba, than thorough cultivation. Go over the province this past year, and in spite of the dry weather, the returns were always better from the summer-fallowed fields, and from those farms where good plowing was done, and where pains are taken to use cultivating implements early and often. The land on nearly all the Icelandic farms is well tilled. Summer fallow is practised regularly.

Weeds are abhorred. Their eradication or control carries its own regard in better tilth and more fertile seed beds. The manure top dressing pays. Alfalfa is now creeping into the rotation and the lessons of the experimental plots quite near Baldur are filtering in to these shrewd fellows. The value of alfalfa as a soil

builder and as a feed for livestock is too alluring to be passed by by these farmers who want the maximum returns on their labor.

LIGHTING SYSTEMS USED.

The countryside between Glenboro and Baldur is a very fertile district. It has been kept so by the good farmers who have taken up the land. Good buildings work nearly every holding. Not only are the buildings good, but the latest improvements in house and barn are installed in the majority of cases, or just as soon as they can afford it. Their houses are lit in many cases by acetylene plants. Running water is nothing new in their homes. Books, pianos, musical instruments, and comfortable furniture are enjoyed. Labor-saving washers, operated by gasoline engines, ease off the women's work, just as the same power operates all labor-saving devices of their well-equipped barns.

The Icelanders take great interest in educational matters. They believe in national schools, improved agricultural methods, and in taking an active part in municipal, legislative and all political government. They are a truly democratic people and have entered into the spirit of Canadianism in a manner that justified Deputy Minister Bedford's estimate of them.

As a result, many names such as Anderson, Sigardson, and Frederickson, appear on the lists of local township councillors, while the name of Johnson already figures prominently in Legislature statesmanship.

A TYPICAL FARMER.

Let us look at one of these Glenboro farmsteads.

Arni Sveinsson, a typical name, has a fine, comfortable homestead. He tells his story in his own fascinating way. Printed letterheads are used on this farm.

"I was born in Iceland at the seaside, in November, 1851. In my boyhood my chief ambition was to become a sailor and shipbuilder; and when I was able to work, my choice for occupation was fishing and boat-building.

"In the year 1876 about 1,200 Icelanders emigrated to Manitoba. Among them were the father and mother of the girl I loved; so I had to leave my native island, although I was not desirous to do so. When we came to Manitoba, we settled on the western shore of Lake Winnipeg. The land was marshy and thickly wooded and consequently not well adapted for agriculture, neither did we know much about it. We had so much to learn, first of all the work and the language, and we did our best in that respect. We were willing to do any honest work that gave money to support us, and our families. We were not well satisfied with the land at Lake Winnipeg, especially after the year 1879 when the lake overflowed its banks to the depth of two to three feet.

The wide veranda and balcony running around the house give a distinction to this spacious prairie home.

"In the year 1880 some of my friends and compatriots settled on the beautiful, rolling prairie north of the Tiger Hills, about 107 miles south-west of Winnipeg. At that time there was not a railway to take them out; so they had to use the ox-cart and wagons, as the best means of transportation. They built small houses or shacks of sod and poplar rails. The land was well adapted for stock-raising and agriculture, and the settlers had better prospects than at first could be expected.

"In July, 1882, I went out with some of my friends from Winnipeg to the settlement. In each township there were only sixteen sections available for homestead. The odd-numbered sixteen sections were C.P.R. lands, two sections were school lands, and two sections Hudson's Bay Co. lands. So at the beginning of the settlement the land could not be thickly settled. But as soon as we had the means we purchased this vacant land. The purchasing of the land kept us from erecting good buildings on our farms. It was not until the year 1896 that the first good houses were built. My house is one of the first and is now rather out of fashion. The newly-built houses are of newer model. The stable or barn was erected in 1902 and is the strongest and best built barn in the neighborhood. I did all the work except the masonry, but my estimation is that the value of the barn is $4,000 to $5,000, and the dwelling house $2,700 with the heating plant. I have erected all my buildings without borrowing any money and have now paid for all my lands—nearly two sections—and have money to my credit in the bank. But I am not to be considered a rich man. All my property is only worth—I think—about $45,000. I have earned it, as carpenter, farmer and thresher. I am now sixty-three and my wife fifty-nine years old, and we are in fairly good health. We now ten children—five boys and five girls—four of whom are married.

Most of the work of building the barn and stable was done by Mr. Johnson himself.

WHAT OTHERS CAN DO.

"I do not tell my story because I wish any personal glory. It may be of value to others who come for better opportunities than ever I had to become self-supporting, to build up our rural Canada, and to assist in bringing up a family of young Canadians for the uplift of this our chosen land.

"I hope the foregoing letter will comply with your request, and give you some idea about the Icelanders. How they came to leave their fatherland, and locate and build up their homes in Western Canada, which will be the motherland of their children, and the home of their future generation; and I sincerely cherish the hope: that the Icelanders will do their duty and help to lay and build up the foundation of a glorious nation in this great and prosperous county; which, in the future, will be the strongest pillar under the British Empire."

That is indeed the spirit of them all. The letter is a monument of thrift and enterprise. It shows what can be done where the faith in one is backed up by determination and honest home-bred thrift.

NEW DEVICE FOR PICKING GRAPES.

A new device that is said to increase greatly the speed at which grapes may be gathered without doing the damage to the vines that is done by hand picking, is coming into use among California fruit-growers. This device consists of a clipper that makes a clean cut through the stem without any danger of tearing. It has two pivoted shear blades. One of the blades is held in a fixed position by a glovelike arrangement, while the other is operated by the index finger. This leaves the thumb, as well as the remaining fingers, free to grasp each bunch of grapes as it is clipped from the stem.

The ingenious little instrument has not yet made its appearance in Canada, but in view of its time-saving qualities it would undoubtedly prove a boon to those farmers and others who add to their income by the cultivation of the vine.

Hot Meals Without Meats:

By Winnifred Marchand

Soups, Supper Dishes, Salads and Desserts from the Winter Vegetables and Apples

Not only because it is "war time" and we want to economize in our food bill, but because there are many vegetable foods rich in nutriment as well as medicinal properties, which should be introduced more extensively into the dietary of most families, it is worth while that we have more hot meals without meat. The writer does not advocate cutting meat out of the diet entirely, it has a value of its own, especially for persons taking a lot of exercise, but the home-grown vegetables and fruits should be served most generously on the farm table.

IT is not entirely because meat is the most expensive staple food in the average home that this article is written. The farmer, more than anyone else, can afford it because he has no middleman's commissions to pay. Neither is it generally a good principle to eliminate meat entirely from the dietary of a family taking a lot of outdoor exercise, but meals consisting largely of meat three times a day, are neither economical nor wholesome. Meat is an excellent tissue-builder, but it is oxidized or burned up in the body so rapidly that it is over-stimulating, unless the energy is required at once for some muscular work. Besides, an excess of proteid cannot be stored in the body and this overworks the digestive machinery, especially the kidneys, as meat, unlike coarse vegetables has little indigestible material for the intestines.

The more meat is cut out of the bill-of-fare, however, the more will other proteid foods have to be supplied. Fortunately the farm has these in abundance, in milk and eggs, beans, peas, oatmeal and whole wheat, and occasionally cheese and fish can be had. Along with these we require the starch and sugar vegetables like potatoes, beets, carrots and parsnips, the coarse and medicinal vegetables like cabbage, turnips, greens and onions, and an abundance of fruit, preferably raw or fresh stewed.

SOUPS WITHOUT MEAT.

In planning hot meals without meat the first dishes to consider are the vegetable soups. The cost of milk for the liquid need not concern us here as it does in town. Every housekeeper has made these milk soups by cooking tomatoes (with a little baking soda) or canned peas or corn, onions or celery, pressing through a colander and adding the pulp to a white sauce (just milk thickened with flour to the consistency of cream). This is heated and seasoned, a little butter added and we have an appetizing nourishing soup. Some unusual combinations of vegetables will add to the variety.

A delicious *potato soup* is made as follows: Wash, peel and slice six medium-sized potatoes, and two small onions, grate one carrot and chop one stalk of celery. Melt two tablespoons of butter in a saucepan and stir the vegetables around in it for a few minutes, but let them brown. Then add enough boiling water to keep the vegetables from scorching, add salt, and cook until the potatoes are soft. Rub this through a sieve, liquid and all, turn back into the sauce pan, add a quart of hot milk and thicken with flour to the consistency of thick cream.

Split Pea Soup.—Soak half a pound of split peas over night in water with a pinch of baking soda. Drain and put them into a soup pot with a cup of chopped turnip, a chopped carrot, a stalk of chopped celery and a sliced onion, and boiling water. Cook slowly until the peas are soft, about three hours. Then rub through a sieve, return to the pot, add enough milk with the liquid to make about one quart. The pulp from the peas will likely thicken this sufficiently without flour.

White Bean Soup.—Soak over night a pint of the ordinary white beans or lima beans. Cook until tender in salted water. About an hour before they are done, chop an onion and fry until yellow in two tablespoons of butter, and add this to the beans. When the beans are soft, press through a colander. Heat a quart of milk, thicken with flour. add the bean pulp and cook for five minutes before serving.

Bisque of Turnip.—Put one tablespoonful of butter, and two tablespoonfuls of chopped onion into a saucepan; stir and cook until the onion is slightly yellow, then add one small carrot, grated, and two cupfuls of grated turnip. Cover the saucepan and cook on the back of the stove for twenty minutes. Thicken a quart of milk with two tablespoons of flour, add the vegetables and salt and pepper, cook ten minutes, add two tablesponsful of butter and serve.

A double boiler should be used in cooking milk as it scorches so quickly if the saucepan is set directly over the fire or hot stove lid.

VARIOUS WAYS WITH POTATOES.

The potato being a staple in every farm home, a variety of ways of cooking should be practised, especially for a supper dish. Baked potatoes are the most easily digested and could be used more frequently than they are. Where we are preparing a meal without meat, however, it is better to use some method of cooking in which the potatoes are combined with some nitrogenous food such as milk or eggs.

Scalloped Potatoes meet this requirement very well. Butter a baking dish, and into it slice raw potatoes and a small onion in alternate layers, adding salt, pepper and bits of butter with each layer. Almost cover with milk and bake an hour or until the potatoes are soft. The onion may be omitted if anyone in the family doesn't like the flavor. Celery seed is sometimes used for seasoning.

Potato Puff.—Take two cups mashed potatoes, two tablespoons butter, two eggs and one cup milk. Mix the milk, butter, salt and pepper with the potato; beat the eggs light and beat them into the potato mixture. Pile in a buttered dish and bake until well puffed and nicely browned on top.

Potato Croquettes.—Many housekeepers consider croquettes out of the question for ordinary use, because they require to be fried in deep fat. They look just as well and are more wholesome, as well as more easily prepared if they are baked in the oven, or browned and turned on a hot frying pan. Take two or three cups mashed potatoes, moisten with milk, and mix with one beaten egg. Season well, shape into balls or rolls, dip in beaten egg then in fine dry crumbs, and fry or bake. If you have any remnants of flaked fish they can be combined with the potato.

The Old Fashioned Potato Cakes, made by kneading flour into cold mashed potatoes, until the mixture could be rolled out and cut with a biscuit cutter, then baked in the oven until brown, with be unfailingly popular.

A *Potato Omelet*, made of one cup mashed potatoes, three-fourths cup milk, and three eggs, is more satisfying than where eggs and milk alone are used. The best way to get an omelet of this kind light, is to add the milk and seasonings to the potato; beat the eggs light and then beat them into the mixture, pour into a greased frying pan and when nicely browned on the bottom set in the oven to finish cooking. Fold and serve.

OTHER HOT VEGETABLE DISHES.

Beans are about the best vegetable to take the place of meat. It is important that they be soaked over night with a little soda in the water to soften the hard cellulose and to get rid of some of the lime, of which they contain a good deal. Then they are drained, rinsed and put on to cook in cold water which is drained off, and the cooking in fresh hot water continued at simmering temperature. Any cook book will give a recipe for Boston baked beans. Tomato juice used instead of water in the baking gives a very appetizing flavor.

Macaroni, which is a wheat paste and very nourishing in starch, can be made into several delicious combinations with cheese, milk, tomatoes and onions. The macaroni is cooked tender in salted water, drained, and blanched by having cold water poured over it while it is in the strainer. The macaroni may then be put into a buttered baking dish in alternate layers with grated cheese, milk added to nearly cover the macaroni, and the top sprinkled with dry buttered bread crumbs. Chopped onion or onion juice improves the flavor for most people, especially when tomato-juice is used instead of milk. A more delicate consistency is obtained, however, if instead of baking, a sauce is made by melting two tablespoons of butter in a saucepan, stirring in two tablespoons of flour, adding two cups of milk, salt and pepper, and onion juice if you, like, stirring this over the fire until a smooth sauce is formed. Put a quarter of

a cup of grated cheese into this and let it melt, but not boil, as cooking tends to make cheese tough and stringy. Pour the sauce over the macaroni in a hot vegetable dish and if you have time sprinkle with chopped parsley, or garnish with strips of toast.

A sauce like the above, without the cheese, makes the right kind of dressing for scalloping any vegetable which is already cooked, and scalloped vegetables are particularly good for supper dishes as the vegetables left over from the noon meal can be used. Cold cabbage, cauliflower, onions, or boiled potatoes can be cut up and put into a buttered baking dish, the sauce poured over them, the top sprinkled with a layer of buttered crumbs, and baked until well heated through and browned on top. Cold fish could be used instead of the vegetables. In scalloping tomatoes we do not want any additional liquid so we would take about two cups of very dry bread crumbs, stir in a hot sauce-pan with two heaping tablespoons of butter, and put these in alternate layers with the tomatoes in a buttered dish, finishing with a layer of the crumbs to brown on top.

We do not use carrots as much as we should. They are valuable not only in medicinal properties but are one of our most nourishing vegetables. The best way to prepare these to make the substantial dish for a meal is to dice about three cupfuls of the raw carrots, parboil for half an hour, butter a baking dish and put a layer of carrots in the bottom, sprinkle with dry bread crumbs (the whole wheat bread is the best if you have it) dot with butter and add a layer of seasoned tomato pulp. Continue until the dish is full, having a layer of crumbs on top. Bake for an hour in a slow oven.

VEGETABLE SALADS AND APPLES.

The farm housekeeper has right at hand all the materials for making the best salads, and she has these the year round. With good cream and eggs, vegetables and apples, it is a mistake to limit the making of salads to the months of green garden things. There is very little work involved either, if the dressing is made in quantities and put away in small sealers to be mixed with cream and used as it is needed. An oil dressing of half a cup of olive oil, two tablespoons vinegar, salt and pepper, can be shaken together in a few minutes any time, but while this is most wholesome and easily digested, it is not generally liked very well in the country because it is difficult to get pure olive oil.

The salad materials, however, are not difficult to have in endless variety. Cabbage alone, or with apples; apples and celery; or apples, celery and nuts; or cabbage and celery, make excellent raw combinations which have a decided medicinal value. The cooked vegetables with a dressing of which the basis is cream, have a tonic and nutrient value as well, and can be made of almost any cold cooked vegetable, potatoes, beets, carrots, cauliflower, green peas, lima beans or the common white beans. If chopped nuts or hard cooked eggs are added, of course the food value is increased.

Then we should begin to make a study of the numberless ways of serving apples. A letter to the Dominion Government, will bring a booklet of two hundred and nine apple recipes to any person interested. While you are waiting for the mail to bring it to you, make a Brown Betty or dish of coddled apples and see if the family don't like them better than a more expensive dessert. The *Brown Betty*, you know is just made by putting alternate layers of sliced apples, sprinkled with sugar and nutmeg and buttered bread crumbs into a baking dish, adding a little water, and baking in the oven. The dish is kept covered to allow the crumbs to be steamed, and just removed long enough before the apples are cooked to brown the crumbs on top.

Coddled Apples are cooked whole in a syrup. The cores had better be taken out but the skins left on to keep the shape. The cavity can be filled with raisins and the apples put in a syrup of a quarter of a cup of sugar to a cup of water. Cloves or stick cinnamon may be used to flavor the syrup, but early in the season while the apple flavor is at its best, the natural flavor can not be improved on. The best way to cook these is in a covered baking dish in the oven as they must cook slowly. They should be basted frequently with the syrup.

The Agricultural Review

The Best Selections From Contemporary Farm Journals and the Publications of Experiment Stations. The Cream of Information.

Potash From Sea Weed

The War is Using Up the Supply of Gunpowder and Germany is Closed for Repairs

From the Technical Magazine.

POTASH is one of the principal constituents of gunpowder, and the European War has practically shut down the German potash mines. With exportations stopped indefinitely, the United States is left entirely without a potash supply, wihle if Germany or some other country should seize all nitrate deposits of Chile, in spite of the Monroe Doctrine, the United States would likewise be at the end of its nitrate supply—the two most important constituents for the manufacture of gunpowder, dynamite, nitroglycerine, and other explosives of war. The respective deposits of the two minerals in these countries are, singularly enough, the only ones in the world, known at present.

The situation is of the most startling significance, however, in connection with an almost world-wide war. About 245,000 tons of dynamite, gunpowder, blasting powder, and other explosives, valued at $40,000,000, are made annually in the United States, the raw materials entering into them being valued at some $23,000,000. Of potash, at least, it is to be assumed that the country will get no more from Germany until the war is over. What will the nations do when their supply of ammunition is exhausted, in the event that the war is an extended one?

The fact that the two countries which control potash and nitrate thereby control the extended supply of the most important element in war—for chemists state that there are no possible substitutes—has apparently not received serious consideration. When it is remembered that a single shot from one of the giant guns of a battleship or a fort burns up enough powder to supply a whole regiment of old-time riflemen for a dozen battles, it can be seen that there is little relation between the ammunition supply of the conflict of to-day and that of earlier wars. All the potash needed in the Revolutionary War might have been leached from wood ashes.

Besides the consideration of powder as a military necessity—assuming that Germany's potash mines are closed to the rest of the world, if indeed they are to be mined at all—where is the U. S. annual consumption of two hundred and fifty million pounds of blasting powder to come from, to say nothing of the five hundred

thousand tons or so of potash which is imported annually as a fertilizer? Potash salts may also be extracted from rocks and from the seaweed kelp, of which there are enormous areas growing off the Pacific Coast, but this also requires the installation of great reduction plants. If the United States is to meet the present demand for potash quickly, what is needed is the discovery of natural potash deposits, if they exist in the United States, as it is believed by scientists that they do.

For both war and peace, therefore, it is expected that Congress will provide for an extensive search for these minerals. It is possible also that Congress may conclude to subsidize the manufacture of both minerals. Already a dozen small companies have been oragnized along the Pacific Coast to extract potash from kelp, but they have been moving with extreme caution on account of threatened German competition and cutting of prices. If they could be assured of some form of government protection and a steady market at even the present price of potash, it is stated that they would push developments rapidly. One plant in North Carolina is also making nitrate of soda from the air.

Farmers and Manufacturers

Results of the Conference at Winnipeg as Viewed by the Grain Growers

From The Grain-Growers' Guide.

THIS was the first time that the leaders of the Manufacturers' Association and the leaders of the organized farmers in Western Canada had ever met face to face. Each side has discussed its own problems through the press and on the platform and had said some very strong things about the policy adopted by what they considered to be their opponents. The representatives of the manufacturers no doubt expected to see a much more warlike aggregation of farmers than those who met at the conference table. The farmers' representatives who gathered at the conference were dressed about the same as the ordinary business man of the cities; none of them carried weapons and none of them adopted a belligerent attitude. On the other hand the manufacturers did not seem to be overloaded with diamonds, nor did they claim that they had a monopoly of Canadian patriotism. There was some slight hesitation shown by both sides in the expression of opinion as the conference opened, but it soon dawned upon the manufacturers that the farmers intended them no bodily injury, and it became clear to the farmers that the manufacturers were not trying to betray them into some action which would lead to their disadvantage. Gradually the diffidence wore away and the conference became most exceedingly frank.

There were thirteen hours actually spent in conference, all of which time was occupied in discussion. The utmost harmony prevailed throughout. The farmers, however, discussed every phase of their program and laid before the manufacturers the true state of conditions in the rural West, showing how artificial restrictions were making farming an unprofitable business for a very large number of our farmers. As the matter was made clear the manufacturers heartily agreed to join hands with the farmers in an effort to have these disabilities removed as far as possible. They expressed themselves as quite willing to make sacrifices for the general good. The farmers' delegates boldly discussed the tariff showing how it burdened the farmers. The manufacturers agreed to have the tariff investigated to see how far it bore heavily upon the farming industry, with the aim of having it corrected. The farmers stated clearly that they believed in free trade with Great Britain, reciprocity with the United States and general traiff reduction. Manufacturers made it equally plain that they were opposed to free trade, but declared that they were equally opposed to a prohibitive tariff. They thought there would be a common ground upon which both farmers and manufacturers would meet, and would be glad to have an investigation by a board of able and unbiassed men, with the aim to arrive at this common ground. The tariff question was naturally the one which led to the strongest division of opinion, but when an agreement was reached to have a thorough investigation made into even the tariff, it was felt that decided progress had been accomplished. The manufacturers frankly admitted that it was bad for their industry to have the farmers of Canada in any other than a prosperous condition, and they expressed themselves as strongly in favor of any program of reform and improvement which would tend towards this end.

There was not so much difficulty met with in discussing the matter of high interest charges upon bank loans and mortgages and this also is to be a subject of searching enquiry. It was shown to the manufacturers that the practice of having all machinery notes, bank notes and other obligations fall due in October and November forced the farmers to throw their crop upon the market and thus break the prices. The manufacturers saw the seriousness of the situation and this will also be one of the subjects of enquiry with a view to remedy. The question of co-operation and the cheaper distribution of the products of the Canadian factories was laid before the meeting by the farmers, and it was shown to the manufacturers how they could help the farmers by aiding a system of distribution which would materially reduce the cost of taking the goods from the factory and placing them in the hands of the farmer. This will also be a subject of enquiry and will undoubtedly be the cause of considerable development in this direction.

Every other point of interest to the welfare of agriculture in Canada was thoroughly discussed and it was generally felt by all those present that the result of the conference would be a decided step in the right direction.

Is Farming a Big Business?

Some Results of U.S. Inquiries into Returns from Farms

From Homes and Gardens.

VERY few farmers who have only $5,000 invested in the business employ much, if any, hired labor. In fact, a farm with this amount of capital is usually a one-man farm. The graduate of a college who would act as superintendent of this farm should be able to do all the work himself, if not interfered with too much by the owner. There would usually be nothing left for the owner to do and no other hired help to board.

A farmer running such a farm would ordinarily make a labor income of about $350. A person who is not so vitally interested would not be likely to run the farm so well. It takes more ability to run such a place and make any profit than it does to run a larger enterprise successfully. A graduate of a college of agriculture who has the experience and the ability that are necessary to make a profit on such a farm is a man who can earn $800 to $1,200 a year in any of several different kinds of work. In short, this represents too small a business to make it pay to hire a graduate.

A few farmers who use this amount of capital are doing well, but they are the exception. A considerable number who know how to farm are doing well when the owned capital is not more than $5,000 and when nearly as much more is borrowed. It is not safe for any but experienced farmers to be so heavily in debt. Another way of obtaining more capital is to be a renter. Many renters with less than $5,000 of their own are doing well.

Judging by the profits that farmers make, 5 per cent. of the capital would be very high pay for a manager. It will be seen at once that no small business would justify one in employing a graduate of an agricultural college as a manager. Usually it requires a wise investment of $20,000 to $40,000 in order to justify one in employing a really good graduate of a college of agriculture who has had good farm experience and good business experience.

A general or dairy farm with this amount of capital will usually employ three to six men. A good manager of such a farm does not conduct his business from an office; he should be at work with the men and should do as much farm work as any other man on the place. No industry can afford a non-working foreman for so few workers.

In sixteen townships in three counties the 23 most profitable farms selling market milk at wholesale had an average capital of $19,728. Their average area was 257 acres, of which 154 acres were in harvested crops.

Successful Tree Planting

What and When and How to Plant for Sure Results

From an Article by Floyd S. Platt in Suburban Life.

WHILE on the road for one of the largest and best-known ornamental nurseries of the country, an incident happened that exemplified the point of view taken by people in general, considering tree-planting.

I happened to stop for dinner at a well-known hotel in one of our Eastern cities. On the opposite side of the table sat another traveling salesman, with whom I got to talking. In the course of the conversation, mention was made of the lines we were selling. Just as soon as I told him that I was selling trees, he asked the question, "Do they live?"

This is simply mentioned to show that there exists in the minds of most people the question of a doubt concerning the success of tree-planting.

That public and private gardens are a source of pleasure, and one of the uplifting influences for good, is a recognized fact. To enable the largest percentage of people to enjoy these privileges means that the principles of tree-planting and gardening information in general should be more clearly understood. While this article is headed "Successful Tree Planting" the principles apply to nearly all kinds of trees and shrubbery for outdoor decoration. Conditions vary so much that each planting requires separate consideration, making it impractical to give here any but general information.

WHAT TO PLANT.

To have the right plant in the right place is one of the most important essentials of success.

No one would try to raise ducks on Broadway, or provide a pond in which their chickens could swim. Why not? Because neither of these places offers the right kind of environment for the successful growth of either fowl.

It is almost as ridiculous to plant a cedar in a shady corner on the north side of your house, or a mountain laurel in a hot, dry place.

Many such misfits can be seen in almost every community, and naturally the plants do not grow satisfactorily. In such cases the planter is, of course, disappointed. The plants do not thrive for want of proper conditions; but it would probably be just as easy to have an attractive planting in each of these places by using plants that are adapted to such conditions.

Of course, not everyone can be acquainted with plants, but there are many ways of obtaining information from books and magazines, and from reliable people who have had experience with work of this nature.

TIME FOR PLANTING.

Just as it has been stated that it is important to get the right plant in the right place, so also it is important to plant your trees and shrubbery at the right time, in order to secure satisfactory results.

In dealing principally with hardy trees and shrubbery, as we are in this article, there are two seasons—spring and fall—when most varieties can be transplanted.

If there is any one question which is asked more than another, it is, "Which is the best season for planting, spring or fall?" Of course, it is true that some plants are best set out in the spring, and that location and latitude enter into the question. Generally, it does not make so much difference which season you plant, as it does that the planting is attended to at the most favorable time in either season.

The trouble with most people is that they do not think anything can be planted in the fall, and in the spring they do not get into the notion until the season is so far advanced that it is too late to move plants with any reasonable degree of success.

As a matter of fact, most kinds of deciduous trees and shrubbery can be planted with just as much success in the fall. There are advantages, too, in planting them at that time. The heat in the soil, stored up from the long season of warm weather, is retained in a degree up until early winter. This warm soil encourages root-growth in the newly planted tree, and enables it to become established and ready to start growing with the first warm days of spring. This means that the planter will get better results than if the planting had been deferred until next vernal season.

Another advantage is because the spring season is so short, and there is usually so much to be done that it is almost impossible to do all. The fall season, extending over a longer period, enables one to accomplish this work in a much more satisfactory manner.

The exact time for planting depends so much on the locality and exposure of the position that it is not practical to fix the exact date. In the latitude of New York, however, the fall season starts after heavy rains in August, when evergreens can be planted, while deciduous stock can be planted from October 1 up until the time the ground freezes. In the spring there is a "golden time," just after the frost has come out, when the ground is mellow and before the new leaves unfurl. This applies more particularly to deciduous stock. Generally speaking, evergreens do not start to grow so early. Then, too, it is always best to transport them with a ball of earth on the roots, so the season suitable for planting extends over a longer period.

Always keep in mind, however, that success in planting is much more certain when a plant is moved while it is in a dormant condition. This is only natural, because, when it is growing, it is, of course, essential that the plant be furnished with a constant supply of food, and it is impossible for the roots to supply it immediately after being planted. Thus the importance of transplanting while they are dormant, and giving the roots a chance to get accustomed to their new location before the time comes for supplying the food required to start new growth.

PREPARING THE SOIL.

As the soil is the source of most plant-food, it goes without saying that successful tree growth depends very largely upon the soil given it to live in. The composition of the soil suited for different trees would require much more detail than space permits here, but, generally speaking, the greater number of trees and shrubs will grow in soil that vegetables thrive in.

It seems wonderful how plants adapt themselves to a variety of soils. Some are much more "touchy" on this point than others, but most kinds, with proper care, soon become accustomed to their new places.

One of the most important things to keep in mind is that the "top-soil" (from 6 to 12 inches deep on the surface) is generally well supplied with plant-food. The soil coming below that depth, being away from contact with the air and effects of plant life, is usually lacking in plant-food. This explains why it is so important to keep the top-soil separate when grading is done, also why many plants do not thrive around new houses, when insufficient top-soil is used.

Commercial fertilizers and stable manure will, of course, help with enriching the soil, but will never take the place of good, fertile garden loam for producing successful growth of trees, grass, shrubbery, or other plant life.

METHOD OF PLANTING.

The paragraph above describes the general nature of the soil that should be used. Dig the holes larger, both in depth and circumference, than seems necessary.

The advantages in doing this are that it helps in providing drainage, gives more loose earth in which the new roots can develop, and a larger quantity of good soil, enabling the plant to grow better and more quickly. In locations that are inclined to be very wet, additional drainage should be provided in the form of stones or similar material in the bottom of the holes. These should be covered with soil before setting the plant in the ground above them.

Remove any broken roots and make clean, fresh cuts on the ends of the larger ones. Set the plant the same depth that it has been growing, which can easily be told by the appearance of the bark. This small thing is of more importance than some people think, it being easy to kill a tree by planting too deep, and shallow planting is likewise detrimental.

The reason for this is that the roots need air, which does not penetrate the soil very deeply, and, on the other hand, they need more protection than shallow planting provides.

Make sure that the soil is finely pulverized, so that it can be packed in firmly about the little roots. This is very important, because a plant takes in food and water through the rootlets (small

roots) only. Therefore, the necessity of providing good soil, and having it carefully and firmly packed about the feeding-roots.

When the ground is at all dry, water thoroughly before filling in the last third of the soil. After the water has settled, fill in the balance, keeping it very firm directly about the trunk or crown, but leaving most of the soil directly on top a little loose. This prevents evaporation of the water, and permits ventilation of air.

A mulch consisting of stable manure, leaves, or similar material, applied on top of the ground directly about the plant, is of great value, particularly the first season. It helps in holding the water, which is necessary until the plant has been growing long enough to send its roots down into deeper soil.

Large trees should be kept from swaying until the roots have taken hold of the ground. This can be done by staking from three points. Old rubber hose about the wire where it comes in direct contact with the tree will prevent it from injuring the bark.

TRIMMING TREES AND SHRUBS.

Generally, it will be found most convenient to trim before setting the tree or shrub, but it really does not make any difference at which time it is done. Perhaps there is an exception to this, because it will often be found best to defer the trimming of fall-planted trees and shrubs until early the following spring.

About the best general rule to follow is to trim back about one-third, which means to cut off that proportion of the top.

Some kinds of trees do not need trimming so severely, and be sure not to remove the leader (top bud) in hardwooded trees like oaks, beeches, etc.

With shrubs, generally, it is best to cut them back more severely. While this may seem to spoil the appearance of the bush, it really is the making of it. It will grow more vigorously, and can be developed into the shaped plant desired, whereas if it were left untrimmed, the growth would be slow, and the bush would never branch out into so shapely a specimen as the one which has received more severe pruning at the time it was planted.

Evergreens. scarcely ever need pruning at the time of planting.

CARE AFTER PLANTING.

With trimming and planting properly done, there is very little after-care required, except to see that the plant is supplied with water.

Remember that the roots for the first year have a very small area from which to draw, thus the importance of keeping that area sufficiently moist. This should be done much the same as Nature supplies it, by giving a thorough soaking and then allowing it to dry out gradually. A little sprinkling on top each day does not amount to anything.

On the other hand, do not overdo it, because you can kill a plant with kindness, by keeping the ground too wet. A good soaking once or twice a week in dry weather is often enough. When there are

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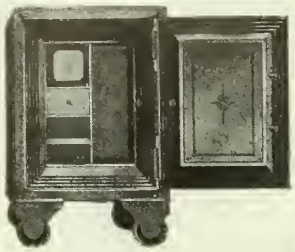

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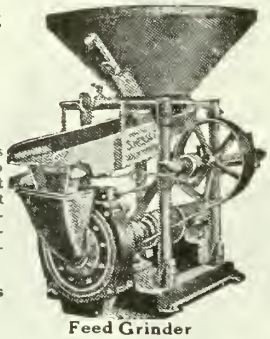

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heavy rains, artificial watering is not required.

The mulch, alluded to elsewhere in this article, will tend to conserve the moisture. When a mulch cannot be used, keep the soil worked up loose to a depth of one to two inches, which will serve as a good substitute.

Where Lime is Needed

From The Country Gentleman.

NOT all soils are acid, so lime should be recommended and applied with some discrimination; its promiscuous use will result in a considerable proportion of failures. It is almost always profitable to apply lime to acid soils, particularly is such acid-sensitive crops as alfalfa and clover are to be grown, but it is rarely if ever profitable to apply this material to soils that are not acid.

We are indebted to the "lime cranks," the "organic-matter cranks," the "phosphate cranks" and a host of other cranks for forcing us to realize the importance of the various single factors influencing soil fertility, but when it comes to making practical application to the various doctrines it should be understood that the well-balanced system of soil management is going to succeed rather than the lopsided one, and that specific treatments that are of great value in some cases may be utterly worthless in others. This situation is especially true of lime. If the soil is so acid as to interfere seriously with the growth of crops it certainly will pay to apply lime, but if the soil is not acid the chances of profitable results from the application of lime are very remote.

Lime neutralizes acids and keeps them from cutting down yields by their poisonous action. Increased yields following the application of lime are due chiefly to the removal of the harmful effect of the acids, rather than to any inherent virtue in an excess of lime as such. The behavior of clover furnishes a concrete illustration of this point: A soil may be inherently capable of producing two tons of clover hay to the acre—that is, it may contain enough plant food, moisture, and so forth—and at the same time contain acids so poisonous to clover that the actual yield is only one ton or less. A small application of lime enough to neutralize practically all the acid but not enough to leave any appreciable excess of lime, will remove the harmful effect of the acid and permit the production of a normal crop.

Sometimes, but not always, it is possible to tell by the behavior of the crops whether or not lime is needed. Persistent clover failure is often regarded as a sure indication of the need of lime, but other things than the shortage of lime may cause clover to fail. The soil may be so short of organic matter that its water-holding capacity will not carry the young clover through the summer drought, the supply of plant food may be inadequate, or some other condition entirely aside from the lime supply may be responsible for the failure. Probably exhaustion of organic matter, with consequent bad physical condition of the soil and poor water-holding capacity, is responsible for quite as many clover failures as soil acidity, though very frequently both these conditions exist in the same soil.

SORREL A POOR TEST.

The presence of certain weeds, particularly red sorrel, is said to indicate soil acidity, but, as in the case of clover failures, these indications must be interpreted with caution in order to avoid such erroneous conclusions as the following incident illustrates:

Not long since I chanced to overhear a scrap of conversation between a couple of young men who were attending a summer school for teachers at a state university in the Middle West. A janitor was on the campus pulling up scattering plants of red sorrel, and one of the young men, seeing him, remarked: "That sorrel surely means that the soil is acid. It is a wonder they do not put on some lime and kill it out rather than pay a man for pulling it up. The university people do not seem to practise what they preach."

The young man had learned just enough to be dead wrong in his conclusion and at the same time quite sure that he was right. As a matter of fact, that particular piece of lawn had been limed at the rate of about four tons an acre with finely ground limestone when it was seeded down five years ago, and by actual test is alkaline in reaction at the present time. It is quite true, as the young man evidently believed, that sorrel frequently indicates soil acidity, but this weed may also indicate some other unfavorable condition. In this case severe drought through the greater part of last summer and again this summer has either killed or rendered dormant all the less-resistant species of plants; and red sorrel, being tremendously hardy under all sorts of unfavorable conditions, holds almost undisputed sway. Plainly the remedy required in this case is water rather than lime. Given a moisture supply adequate to keep the blue grass and white clover growing luxuriantly and necessitate frequent mowing and there would be no trouble with the sorrel. Lime would affect it neither one way nor the other.

Sorrel, like other weeds, becomes a serious pest on almost any kind of soil unless it is held in check by cultivation and smother crops. If the soil is well supplied with organic matter, plant food, lime and moisture, and is otherwise suited to the growth of clover and the grasses, it is comparatively easy to hold sorrel in check. It gets little chance to grow and make seed if the land is covered with a heavy growth of clover or grass. On the other hand, if the land is in any manner unsuited to the growth of clover, or if for any reason a good stand is not secured, then sorrel has an opportunity to develop.

The expressions "acid soil" and "sour soil" are very frequently used synonymously. But "sour" is also applied to wet, soggy, poorly aerated and poorly drained soils, and the confusion of terms is probably responsible for the rather common notion that wet, poorly aerated soils are likely to be acid. As a matter of fact, such soils are rather less likely to need lime than certain other types of soil—sand, for example. Soil acidity is a thing quite apart from physical characteristics.

Acids develop in all soils as a result of decomposition of both mineral and organic soil constituents. If the soil contains an adequate supply of lime these acids are neutralized as fast as they are formed and no permanent acidity results. On the other hand, as soon as the supply of lime is exhausted the acids accumulate.

The supply of lime in the soil is depleted by reaction with acids, as above mentioned, and also by going into solution in the water that percolates through the soil. Sandy soils, through which water passes very readily, are particularly prone to acidity, apparently because the lime is dissolved and washed out by the water.

Whether to regard sorrel as an indication of acidity must depend upon other conditions. If the soil contains enough plant food and organic matter to grow clover and the grasses successfully, and sorrel still refuses to be smothered out and the yields of clover are not what they should be, then there is good reason to believe that lime is needed. But if there is some condition aside from the lime supply sufficient to account for a thin stand or poor growth of clover and the grasses then sorrel means no more than any other weed. In such cases correction of the other unfavorable conditions is likely to be vastly more profitable than the application of lime.

Care of Caged Birds

Some Points About the Feeding of the Little Songsters

From Our Dumb Animals.

THE personality of a bird is ever charming to the appreciative, even within the narrow limits of a cage; and when the acquaintance is made of a particularly intelligent little feathered person, it is an experience not soon to be forgotten.

But to come down to practical considerations in the care of cage-birds. It may be said to begin with, that it is unpardonable in anyone keeping a bird, to neglect attending to the few and simple requirements of a little creature whose well-being depends on them. No one should take a bird out of the care of a dealer or bird-fancier without getting full directions on its diet and general treatment, and following them closely. It is not either wise or kind, moreover, to get into the habit of offering a small bird anything in the form of an eatable which may be in sight. This is a weakness common to the amateur bird-fancier, who seems to have

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S.H.B.

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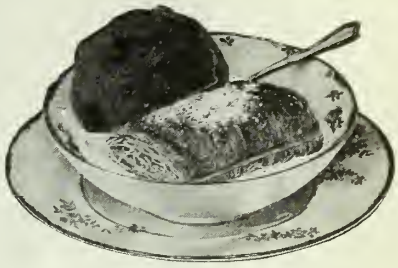

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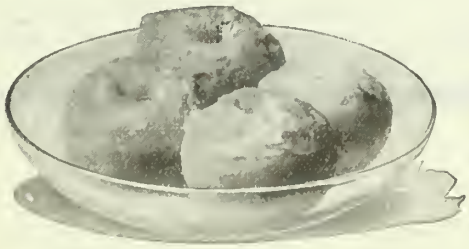

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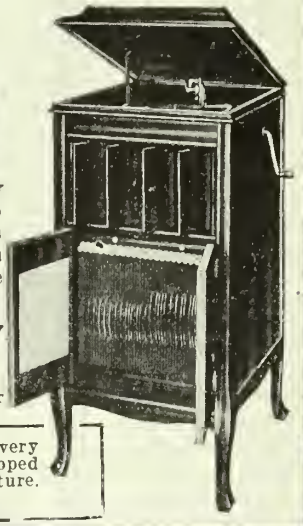

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the idea of making amends by such means for the loss of its liberty—even though it is known that over-fed birds, like most other creatures, are apt to come to a painful and ignominious end, as the result of such indulgences.

A bird of any species will never fail to show an interest in a handful of green things, such as leaves and sprigs of almost any plant or vegetable; not only lettuce, and the tender stalks of beets—which are best known as greens acceptable to the birds—but berries in their season, and also apples. There are many of the weeds we regard as useless, which contain in their leaves and seed pods rare dainties for the feathered folk.

Chickweed, thistle-heads, the plantain with its spike of seeds, a stray sunflower—all these are acceptable; with other things—game for instance—consisting of insects and the like to be found in the recesses of the plant stalks and leaves, and which are doubtless bagged by the feathered hunter with as much enthusiasm as would be shown by any other pot-hunter.

Clean, pebbly sand, a cage scrubbed at least twice a week with soap and hot water, drinking water changed several times in the day, and a bath if it seems looked for—all these things are absolutely necessary to the health and well-being of a cage-bird.

Another hint to the possessor of a pet bird which may not be out of place, is that a bird appreciates a change in its surroundings almost if not quite as much as a human being might be expected to under the same circumstances.

A canary will make it very evident that it is pleased with the change afforded by hanging its cage in a different window than that it is accustomed to be in, just for the sake, apparently, of the novelty afforded by seeing things from another point of view.

Feeding Fall Pigs

How the Corn Country Takes Care of its Winter Pigs

From the Swineherd.

A breeder of Poland-Chinas who has made a success in developing pigs and handling them in such a way as to produce profitable pigs states that he cares for and grows his Fall pigs in the following manner, which has worked out satisfactorily to him.

First he selects the right kind of a brood sow, individually as well as breeding. He believes in having a sow in a good strong, healthy condition, to stand the strain of suckling a litter. As soon as the pigs are furrowed and are old enough to attempt to eat, he has a "Creep" where they can get into a pen which larger pigs cannot; here they can eat by themselves. He gives them just a little skim milk, with middlings and a little soaked corn. While he has never fed full fresh milk, he believes it would pay to do so, in starting them, as they grow older he increases the feed from a small start so that they will always eat it up clean and hunger for a little more. As the weather becomes colder, he begins to warm their feed by adding some cooked ground rye, middlings, and barley mixed together, equal parts, and skimmed milk added to make a thin slop, so they can drink it. After they have had all they want to drink, give them what shelled corn they will clean up, which is not very much as they do not care much for corn after they have had all they want to drink of the cooked feed and milk.

As they grow older and leave the sow while the weather gets colder he plans so that they have to come quite a distance from their nest to their eating place. This compels them to take the needed exercise. They should be nested in a good comfortable dry place, not too warm, so as to make them liable to steam, but keep it dry and clean.

One of the benefits he notices in feeding warm feed, is that they do not go rushing back to their nest and cuddle up to get warm, like they do after eating cold feed; but they will wander around even if the snow is deep, feeling comfortable. This gives them more exercise and is one thing that must surely be looked after in the winter time, as it is almost impossible to get the growth on them that you can on a Spring pig. As they grow older he feeds them more corn if they are being prepared for the market. They have also ashes to run to which he throws out from under the cooker, and they always keep them cleaned up, showing that they need them.

With this kind of feed and management and with good smooth, large Poland-China hogs he has them to dress slaughtered 258 lbs. at seven months old, and a good big bunch of them averaged 233 lbs. dressed. They were never confined to a small pen at any time, but took their exercise every day and made a profitable market hog.

GOD SAVE THE KING.

O God! before Thee now,
With humble faith we bow,
And grateful heart.
Grant that until the last,
As in its glorious past,
This British Empire vast
Play well its part:

Not with a selfish aim,
Not to desire acclaim
Throughout the world.
But that its ensign bright
May ever, in Thy sight,
Speak freedom, truth and right
Where'er unfurled.

—*Hon. W. S. Fielding.*

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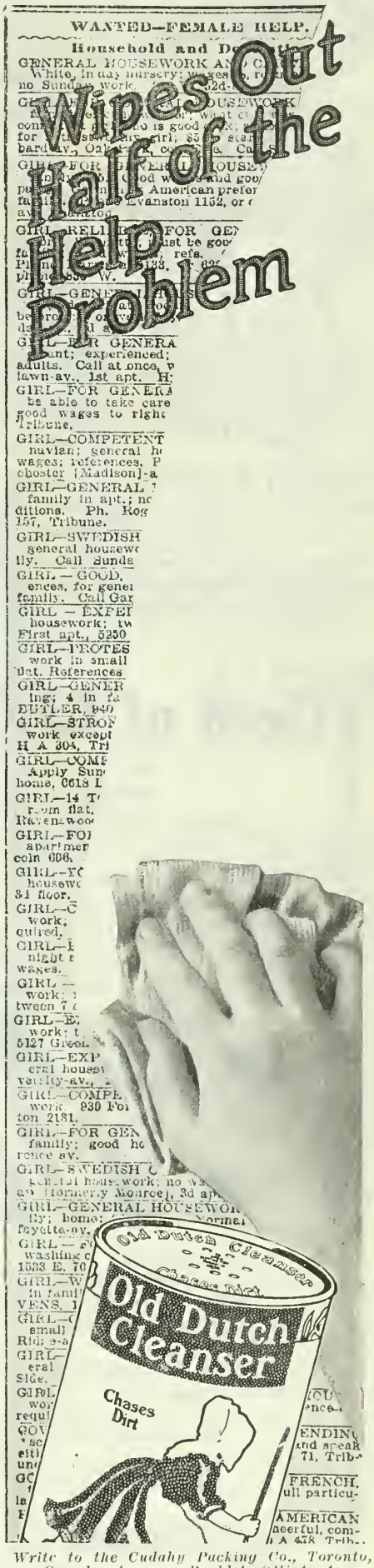

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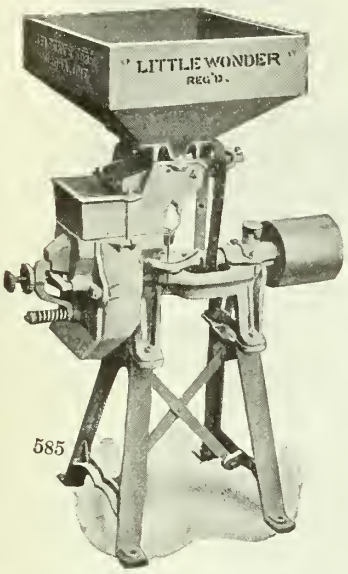

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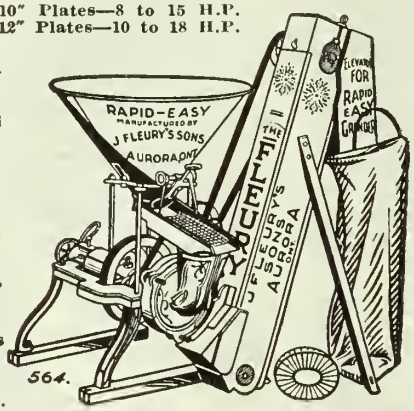

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Sense in Old Sayings

From The Rural New Yorker.

As to the moon, the divining rod and others of their ilk, I don't believe it is going to rain to-morrow just because the tin peddler passed to-day. Don't laugh. I had a man working for me once who did believe just that, and insisted that he had never seen it fail. He was the same man who refused to take the shoes off a dead horse because to do so would surely cause the death of another horse. Nonsense, you say! Of course it is nonsense, and there are thousands of other old sayings just like these two which are evidently ridiculous. On the other hand, it is only a few years, as time goes, since we laughed at the man who said "Lime enriches the father but impoverishes the son." How could the inanimate lime distinguish between the two generations? We have lived to learn what this means, and to learn that it is very true. It has been scientifically explained.

As we were working in a meadow together one of my men said: "I see five-finger is coming into this lot, and if it does the grass will go out. Timothy don't like five-finger." Just another of the old sayings. Let us see. Curiously enough it was only a few days later that one of my professional friends dropped in, and walking across the same meadow casually remarked: "I observe that cinquefoil is encroaching here. That indicates acidity, and you cannot expect a good stand of timothy in an acid soil." Ah, ha! I see! Then it was not a social antipathy of the aristocratic timothy for the plebeian five-finger, but was indeed a fact, crudely expressed because coming down through hundreds, perhaps, of generations, but none the less true.

When I first came out of the city I undertook to give some bystanders a chance to laugh at a "water witch." Alas for me, he handed me the twig and said: "Try it yourself." I could not refuse, so I took it, determined that it should not turn down in my hands. I would have given a brand new city hat I was wearing to keep my determination, but the twig began to twist, and the harder I gripped the more it turned. I set my teeth and clenched my fists, but the twig turned down and the crowd had their laugh, but not at the "water witch." It was a good lesson for me, and any success I have since had in the country has come from realizing my own ignorance and being willing to listen to my farmer friends.

$13,000 from Strawberries

Continued from Page 34.

to bother with or get iced cars started.

People never get tired of strawberries. Ontario and Quebec stock is always over before the Maritime Provinces begin. If we would begin to co-operate in Canada, we could keep the cities of Canada and the northern United States centers supplied with this delicious berry for two months each year.

Between Ourselves

A Drawer for Questions of Home and Family Interest

By GENEVIEVE

GAMES FOR THE HOLIDAY PARTY.

Q.—Will you send me some new ideas in games for a simple evening entertainment in a country home.—E. M., Ontario.

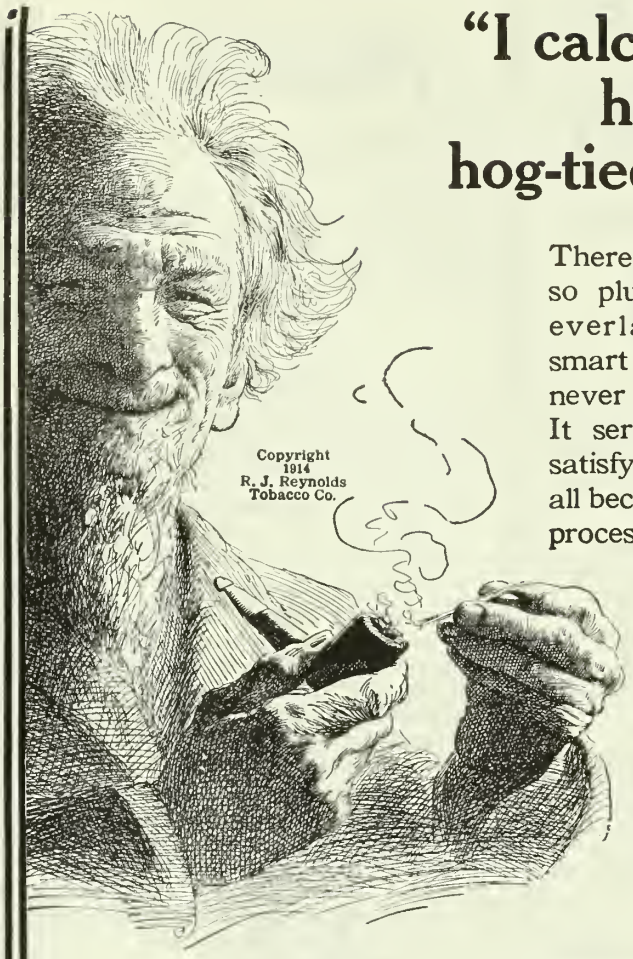
A.—It is a good idea to begin with a round game to get your guests thawed out. After that a competition will hold the interest. A very good idea along this line is the "Musical Stories" game. This game needs preparation on the part of the hostess. Pencils and papers whereon are lines numbered from one to forty or fifty according to the number of answers arranged for are required, and, if possible, an original story should be written for the occasion, the story to contain as many titles of well-known songs and ballads as possible. The story is read aloud by someone, leaving out the titles of the songs. The first line of the song as it occurs in the story is played on the piano, and the competitors write it down opposite the right number. The story might be something like this:

Once upon a time "On the Bonny, Bonny Banks of Loch Lomond," live a fair maid called "Annie Laurie," who, one evening as she was "Comin' Through the Rye" saw "John Peel" hurrying toward "The Blue Alsatian Mountains." When he saw her he said three of "The British Grenadiers," who were sailing in the "Bay of Biscay," have been missing since yesterday morning. "Oh," said "Annie Laurie" flippantly, then their "Life on the Ocean Wave" will be over and they will be "Rocked in the cradle of the Deep." I have also another piece of news for you said "John Peel." "The Minstrel Boy," "Robin Adair," has gone to the war without permission, and which makes it worse, he has stolen his father's sword. His father, who is "Old Dan Tucker" and lives at "Killarney," is furious. But let us change the subject, and he led her to a seat "In the Shade of the Old Apple Tree" and said "Darling I Am Growing Old," and so on.

This may be continued to any length, but the hostess must have the music for each song ready beforehand so there is no waiting to find the place. The game is worth preparation and almost invariably has a good reception. Instead of reading the words between the names of the songs, they could be written between the blanks.

For a New Year party a "Watch Contest" would be in order, giving each person a paper with the following lines written and space for answers:

1. Used before.—Second hand.
2. Fifteenth wedding anniversary.—Crystal.
3. Caesar, Mark Antony and Brutus.—Roman characters.
4. What we give a caller.—Our hand.
5. Something women like for adornment.—Jewels.



"I calculate that P. A. has pipe-joy hog-tied and branded"

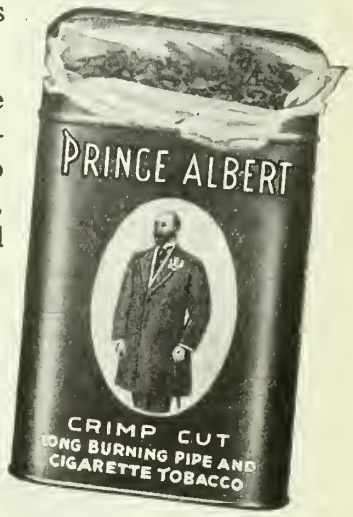
There never can be another tobacco so plumb full o' happiness, and so everlasting shy of the sting and smart that makes you wish you'd never learned to smoke, as P. A. It serves you with just one soul-satisfying smoke after another, and all because of that wonderful patented process that sent the old-line tobacco-bite and tongue-burn to the discard. If you want a lickin' good cigarette just roll one from

PRINCE ALBERT

the inter-national joy smoke

and before you know it you'll be rollin' another. Once you're hep to the joyousness of this tobacco you'll be buying it for good.

Prince Albert, the largest selling brand of pipe smoking tobacco in the United States, is manufactured by the R. J. Reynolds Tobacco Company at their factories in Winston-Salem, N. C., U. S. A. It is imported from the United States by Canadian dealers.



Prince Albert is sold everywhere in full 1/8th tidy red tins that just fit the hip pocket.

R. J. REYNOLDS TOBACCO COMPANY
Winston-Salem, N. C., U. S. A.

A Good Opportunity

to secure some excellent engravings at low rates

WE have in stock a large number of cuts which have been used in the editorial columns of this publication. Any person desiring any of these can secure them at greatly reduced prices, in some cases for less than the original photographs cost us. Make your selection from either past or current issues and write us.

The MacLean Publishing Co., Limited
143-153 University Avenue, TORONTO

SUPERIOR HARNESS You may pay a higher price, but you'll never get a better quality.

The Alligator Brand Harness is made of durable material and guaranteed workmanship, which stands for unequalled quality and guarantees satisfaction.

Alligator Brand Goods are MADE IN CANADA

When buying leather goods look for the Alligator Brand.

Write us a card and we will have our representative call upon you. Write to-day.

Lamontagne Limited.
BALMORAL BLOCK
NOTRE DAME ST WEST. MONTREAL. Can
Manufacturers of Harness, Trunks, Bags, Etc.

1 cup Brown Sugar
1 cup White Sugar
1 cup Milk. Piece of Butter, size of Walnut, half cake of Chocolate, pinch of Salt.
Boil over low fire. When done stir in half cup chopped walnut meats. Add half teaspoonful vanilla, stir until creamy and pour into "Wear-Ever" biscuit pans.

Make this Fudge in a

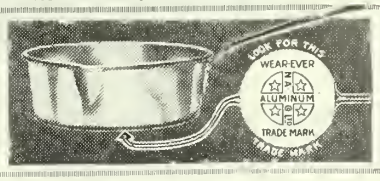
"Wear-Ever" Aluminum Sauce Pan

"Wear-Ever" utensils get hot more quickly and stay hot longer than other ware. Use them and save money, time and labor.

Replace utensils that wear out with utensils that "Wear-Ever"

Write for booklet, "The Wear-Ever Kitchen—full of things you should know about aluminum ware.

WANTED: Men to demonstrate and sell "Wear-Ever" Specialties. Only those who can furnish security will be considered.



Northern Aluminum Co., Limited, Toronto, Ontario Dept. 77. Send prepaid 1-qt. (wine measure) "Wear-Ever" Stewpan. Enclosed is 20c in stamps—money refunded if not satisfied.

Name .....
Address .....

BE a window trimmer. This most interesting work pays well. You can learn by studying the new window trimming book, called Show Window Backgrounds, by Geo. J. Cowan, at $1.50, postage paid. MacLean Publishing Co., Ltd., 143 University Ave., Toronto.

6. Summer resorts.—Springs.
7. Read by the secretary.—Minutes.
8. Supports a flower.—Stem.
9. A remainder and a bicycle.—Balance wheel.
10. Something of which a vain woman is proud.—Face.

In planning your entertainments, don't forget that the old games may be enjoyed quite as much as something new. Perhaps you will find some suggestions in the clippings sent you.

JUDGING A PIE CONTEST.

Q.—I would like to have a rule for judging pumpkin pies at a Women's Institute gathering some time in the future. I would suggest the following, but if there is anything better would like to have it:

Cheapness of material....	30 points
Taste	40 points
Appearance	30 points

A.—Your system should be a very good one. I would suggest dividing up the points allotted to cheapness of material, giving about ten to that and the rest to the nutrient value. Pumpkin pie is a nourishing food as well as a condiment, if eggs and cream are used, and, of course, this is where the greater part of the expense comes in—an expense which might not be justifiable where these have to be bought, but we consider it a wise use of home produce on the farm. Would it also be a good idea, instead of allowing thirty points for appearance, to give about ten to appearance and twenty to the quality of the crust?

CHILDREN'S QUESTIONS.

I am preparing a paper for our Institute on the subject: "How Shall We Answer the Child?" Can you advise me as to any literature on the subject, and how would you deal with the habit which so many children have, of constantly asking questions, when they don't seem to be really much interested in the answer?—Mrs. A. R. W., B.C.

A.—You will find Dr. Morley's book, "A Song of Life" to be an excellent work on this subject. Regarding the child's habit of asking one question after another, with evidently little desire to gain information, the best plan, I think, is to teach him to answer as much as possible for himself. For instance, he sees a ladder leaning against the eaves of a house and asks, "Mother, what is the ladder up against that house for?" Instead of answering in that patient but bored way, "So they can get up on the house, dear," the mother says with interest, "I wonder what it can be there for?" "So they can get up on the house," he announces triumphantly, for, of course, he knew at the beginning why the ladder was placed there. "But why should they wish to get up there?" the mother persists, and the boy very likely hits upon several reasons. In beginning to find his own answers, he is taking the first step in learning to reason. Of course this method does not apply to the class of questions which require a frank and honest answer. A child's questions should always be respected. He has much to learn and this is the natural method of finding out.

Gamble With a Government

MEN, in search for a home, in recent years have penetrated almost every corner of the North American continent. Little by little the silent places have given way to the onrush of civilization whose forerunners are the cattleman and the homesteader. The far-reaching stretches of Northern Canada's hinterland, still thought of by many as a bleak and inhospitable land, home only of the fur-bearing animal and the Indian, are today yielding up their frontiers to the taming influence of the ax and the plow. To claim this wilderness have come as yet only a few scattered thousands; a vanguard composed of almost every nationality in Europe.

Some joker, name unknown to fame, but whose saying is historic throughout the West, remarked anent Canadian homestead laws: "The Canadian Government bets one hundred and sixty acres against your ten dollars that you cannot live on the land for three years."

Though in many cases his saying was only too true the few American settlers who have made their way into this land are at least not affected by it. They have come fully armed and prepared to carve out their homes. Horses, money, wagons, implements and knowledge backed by experience are their weapons and to that country that lies along the banks of the Athabasca and Peace rivers in Northern Canada during the last two years there have come some ten thousand. Consequent with the arrival of settlers followed the railroad surveyors and the townsite men. So, in this land where thousands of acres still lay virgin and unclaimed certain tracts, by reason of their proximity to newly surveyed railroad lines or their possibilities for future townsites, became extremely valuable. These, at various times, become open to the public to file upon.

Recently at Grouard, Alberta, a small town four hundred miles from a railroad, there finished what is the longest land wait in the history of Canada or for that matter upon the American continent. Here men waited before the Dominion Land Office eight months through the rigors of a sub-Arctic winter and the dry, dead, mosquito-infested heat of its summer, to file on a few sections of this wilderness suddenly enhanced so wonderfully in value.

So gambling with a Government, contrary to the wise saying of the joker has proven in many cases a lucrative undertaking.

F. J. DICKIE.

Our Pattern Pages

Patterns will be sent Post Free on Receipt of Price. Address Pattern Department, Farmer's Magazine, 143-149 University Avenue, Toronto

Note.—Much trouble is caused by the persons who order patterns, neglecting to give their names and addresses, as well as the sizes of the patterns required. A word to the wise is all that's necessary.

6909—LADY'S DRESS.

This semi-fitting model has a princess panel in front, which may extend to the lower edge of the tunic or be cut off at basque length. The skirt has a front gore with side extensions at the lower part and two back gores. The sleeve is small and set in with a regulation armhole.

The dress pattern, No. 6909, is cut in sizes 34 to 44 inches bust measure. Medium size requires 1½ yards of 36-inch figured goods and 3⅛ yards of 44-inch plain. Also 1 yard of 36-inch lining for upper back gores.

This pattern can be obtained by sending 15 cents to the office of this paper.

6884—LADY'S COAT.

This long, plain coat is built on the newest of fashion lines. It has a front yoke, but the entire back is in one from neck to hip. In front there is a waist section below the yoke. The skirts of the coat are attached at the hip or low waist line. At the open neck is a flare collar and the small, fitted sleeves are finished with a cuff.

The coat pattern, No. 6884, is cut in sizes 34 to 44 inches bust measure. Medium size requires 2⅞ yards of 54-inch material, with ⅝-yard of 54-inch for collar and cuffs.

This pattern can be obtained by sending 15 cents to the office of this paper.

HE LOVES HIS BATH

With

CUTICURA SOAP

Because it is so soothing and refreshing when the skin is hot, irritated and rashy, especially when assisted by light touches of Cuticura Ointment.

Samples Free by Mail

Cuticura Soap and Ointment sold throughout the world. Liberal sample of each mailed free, with 32-p. book. Address "Cuticura," Dept. 133, Boston.

Knitting Machines
HOME MONEY-MAKERS

Home knitting is quick and easy with any one of our 6 Family Knitting Machines. Socks and Stockings, Underwear, Caps, Gloves, Mittens, etc.—Plain or Ribbed—can be knitted ten times as fast as by hand, and for far less than they cost ready-made.

A child can work our machines. Besides your own family work, you can make good money knitting for others.

Your choice of 6 Machines.

Our Illustrated Catalogue Free—No. 101. Agents wanted in every locality for Typewriters and Home-money-maker Knitting Machines. Address—

CREELMAN BROS.

Box 658. Georgetown, Ontario.

Children Need Sugar

Pure sugar is necessary to the health of young or old. Good home-made candy, sugar on porridge, fruit or bread—not only pleases but stimulates.

Buy St. Lawrence Extra Granulated in bags and be sure of the finest pure cane sugar, untouched by hand from factory to your kitchen.

Bags 100 lbs., 25 lbs., 20 lbs.; Cartons 5 lbs., 2 lbs.

FULL WEIGHT GUARANTEED.

Sold by best dealers. 11

St. Lawrence Sugar Refineries, Limited, Montreal.

6926—LADIES' WAIST.

This basque gives us a very handsome development of the straight line figure. It has the front and back panel form, with closing in the front. The side bodies are joined by long seams, extending from shoulder to hem. The neck may be high with straight stock collar.

The pattern, No. 6926, is cut in sizes 34 to 44 inches bust measure. Medium sizes requires 1⅜ yards of 44-inch material with ⅞ yards of 36-inch satin.

Price of pattern 15 *cents.*

SYNOPSIS OF CANADIAN NORTH-WEST LAND REGULATIONS

THE sole head of a family, or any male over 18 years old, may homestead a quarter-section of available Dominion land in Manitoba, Saskatchewan or Alberta. Applicant must appear in person at the Dominion Lands Agency or Sub-Agency for the District. Entry by proxy may be made at any Dominion Lands Agency (but not Sub-Agency) on certain conditions.

Duties—Six months' residence upon and cultivation of the land in each of three years. A homesteader may live within nine miles of his homestead on a farm of at least 80 acres, on certain conditions. A habitable house is required except where residence is performed in the vicinity.

In certain districts a homesteader in good standing may pre-empt a quarter-section alongside his homestead. Price $3.00 per acre.

Duties—Six months' residence in each of three years after earning homestead patent; also 50 acres extra cultivation. Pre-emption patent may be obtained as soon as homestead patent, on certain conditions.

A settler who has exhausted his homestead right may take a purchased homestead in certain districts. Price $3.00 per acre. Duties—Must reside six months in each of three years, cultivate 50 acres and erect a house worth $300.

The area of cultivation is subject to reduction in case of rough, scrubby or stony land. Live stock may be substituted for cultivation under certain conditions.

W. W. CORY, C.M.G.,
Deputy of the Minister of the Interior.

N.B.—Unauthorized publication of this advertisement will not be paid for.—64388.

6906—LADY'S WAIST.

This waist is among the most popular and may be made of silk, satin, crepe fabrics, etc. The fronts are crossed in surplice fashion, the ends being extended to form a sash, tied in the back. Here the material hangs straight and forms a small square coat tail. The sleeves are plain and full length and a fancy collar finishes the neck.

The pattern 6906 is cut in sizes 34 to 44 inches bust measure. Medium size requires 2⅜ yards of 36-inch material.

Price of pattern 15 *cents.*

6908—DOLL'S DRESS.

This young person is clad in the new tunic suit, with plain blouse, opening in the back, the neck trimmed with a handsome collar and the short sleeves cut in one with the body of the dress. There is also a one-piece coat with a diagonal closing across the front and without collar.

The pattern 6908 is cut in sizes for dolls from 14 to 26 inches in length. The 24-inch doll requires for dress ⅝-yard of 27-inch striped goods and ⅞-yard of 27-inch plain goods; for coat, ½-yard of 27-inch material.

Price of pattern 10 *cents.*

6877—GIRL'S DRESS.

This design offers a pleasing variation of the popular Middy style. It has the plain sailor blouse, with a short opening at the neck, trimmed with a wide collar and a plain sleeve joined to the drop shoulder. The plaited skirt buttons to the lower edge of the blouse. In most cases two materials are used for these dresses, but one will be pretty if preferred.

Price of pattern 10 *cents.*

The Prestige of
Gerhard Heintzman Pianos

has been GREATLY STRENGTHENED through the PATRIOTISM shown by the makers of

CANADA'S FINEST PIANOS

who several months ago, in order to obviate the necessity of having to lay off a large portion of their factory force, decided to SACRIFICE PROFITS during the term of the war in order to stimulate the sale of

Gerhard Heintzman
Pianos

so as to keep every employee working part time at least. The manner in which

Canadians Have Responded

is splendid. Many have bought pianos who would have waited a year or more otherwise. This too is a true spirit of patriotism.

Buy A Canadian Made Piano

Buy your piano now; help Canadian workmen and incidentally save money.

NOTE—For several weeks past the Gerhard Heintzman factory has been running full time, with their complete staff.

GERHARD HEINTZMAN, Ltd.

41-43 Queen St. W. (Opposite City Hall)

Salesrooms in Hamilton
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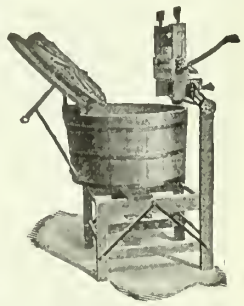
Brings Happiness—A Good Gift

The Connor Ball-Bearing Washer means freedom from wash-day drudgery. It means real economy in time, money and clothes. It washes better and easier than the old way and saves many hours from hard work

Will make a practical gift and the benefit is lasting. It means an all-year-round saving to your home.

Write for Catalog "C" and learn how to save clothes, time and money.

J. H. CONNOR & SON, Limited - Ottawa, Ontario



Established in 1881.

Make your CANDIES at home this CHRISTMAS with KNOX GELATINE

You will find them delicious and inexpensive to make.

This recipe shows you how easily and quickly *you* can make these new confections.

KNOX FRENCH DAINTIES

2 envelopes Knox Acidulated Gelatine
4 cups granulated sugar
1½ cups boiling water
1 cup cold water

Soak the gelatine in the cold water five minutes. Add the boiling water. When dissolved add the sugar and boil slowly for fifteen minutes. Divide into two equal parts. When somewhat cooled add to one part one-half teaspoonful of the Lemon Flavor, found in separate envelope, dissolved in one tablespoonful water and one tablespoonful lemon extract. To the other part add one tablespoonful brandy, if desired, one-half teaspoonful extract of cloves, and color with the pink color. Pour into shallow tins that have been dipped in cold water. Let stand over night; cut into squares. Roll in fine granulated or powdered sugar and let stand to crystalize.

Vary this recipe by using different flavors and colors, and if desired, add chopped nuts, figs, dates, raisins or peanuts to the lemon mixture.

Send for this FREE Recipe Book

An illustrated book of recipes for **Candies, Desserts, Jellies, Puddings, Ice Creams, Sherbets, Salads, etc.,** sent FREE for your grocer's name.

Pint sample for 2c stamp and grocer's name

CHARLES B. KNOX COMPANY
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Business and Shorthand Subjects taught by experienced instructors. Established 30 years. **Send for free catalogue.**

J. W. WESTERVELT, Principal

KEEP CLIMBING

Of course you are not satisfied with your present position. Why not spend your winter evenings pleasantly and profitably by taking our **MAIL COURSE** in **Shorthand, Bookkeeping or Civil Service?** WRITE FOR FREE CATALOGUE.

THE DOMINION BUSINESS COLLEGE, LIMITED
Corner College and Brunswick, Toronto
J. V. MITCHELL, B.A., Principal 19-H

Home-made Candy

Inexpensive and Wholesome Sweets for Christmas

1. *English Taffy.*—1 lb. brown sugar; one-third cup butter; 4 tablespoonfuls vinegar. Heat sugar, butter and vinegar until well dissolved. When the mixture bubbles stop stirring and let it boil until it turns brittle when dropped into cold water. Pour into a buttered pan and when partly cooled mark off in squares.

2. *Cream Candy.*—5 cups white sugar; 1 cup boiling water; 1 cup sweet cream; ½ teaspoonful vanilla. Dissolve the sugar in the boiling water and boil until it forms a soft ball when dropped into cold water. Then add the cream and cook to the hard ball stage, or until it forms a hard ball when dropped in cold water. Remove from the fire, add vanilla or other flavoring, pour on buttered plates and as soon as it is cool enough to handle, pull it. Wrap in waxed paper and put [illegible]. In twenty-four hours it will be creamy.

Maple Cream.—2 cups sugar, ½ cup milk or cream; 1 to 2 tablespoonfuls butter. Stir the sugar and milk over the fire until the sugar is dissolved. Boil without stirring for eight minutes, add butter and boil to the soft ball stage. Remove from the fire, add flavoring vanila or mapleine, stir until creamy, pour into molds, and cut when cold.

Fruit Fudge.—Make the same as maple cream, and while stirring add one-half cup each of chopped nuts, raisins and dates.

Chocolate Fudge.—Add 2 tablespoonfuls grated chocolate to each cup of sugar before boiling,and make the same as maple cream.

Soft Candy With Egg White.—3 cups sugar; 1 egg white; 1 cup water; flavoring. Boil to the soft ball stage. Add flavoring, then beat the hot syrup gradually into the beaten egg. Beat until the mixture is thick and will keep its shape when dropped. Salt may be added to the egg-white; then it is called "Sea-Foam." Brown sugar may be used, or a tablespoon of grated chocolate, very strong coffee, or caramel may be added to each cup of sugar.

Mexican Candy.—5 cups granulated sugar; 1 cup golden syrup; 1 cup water; 2 to 4 egg whites; 1 cup walnuts; flavoring. Boil the sugar, syrup and water three or four minutes. Beat the egg whites until stiff. Remove one cup of the syrup and beat it into the egg whites, and boil the rest nearly to the hard ball stage. Add this gradually to the beaten egg mixture, beating constantly. Add flavoring and nuts and pour into a greased pan.

Turkish Delight.—1 ounce gelatine; 1 large juicy orange or 2 small ones, 1 lemon. Soak the gelatine in two-thirds cup of cold water for five minutes. Put the sugar on to heat with two-thirds cup water, dissolve and heat to boiling. Add the gelatine, stir until dissolved and boil twenty minutes. Add the grated rind and the juice of the orange and lemon. Wet a mold with cold water, pour the mixture into it one inch deep, and when set turn out, cut in cubes and roll in powdered sugar to which one teaspoon of cornstarch has been added. Nuts or candied fruit, or raisins and dates may be added when the mixture is still warm.

Marshmallow.—2 tablespoons gelatine; 4 tablespons cold water; 2 tablespoons boiling water; 1½ cups sugar; flavoring. Soak the gelatine. Dissolve the sugar in boiling water and boil for a minute or two. Add the gelatine and flavoring. Let stand until partially cooled, then beat with a wire whip until light and stiff. Pour into molds and when well set cut it.

Fruit Granite.—1 cup dates; 1 cup raisins; 1 cup nuts. Put these through a meat grinder, turn on to a bake-board which has been dusted with powdered sugar, mould with the hands, roll out with a rolling pin which has been rubbed with powdered sugar, and cut into cubes.

VOCATIONAL SCHOOLING.

The experience of every country which has adopted a system of agricultural education has been that the increased production following as a consequence more than compensates for any cost which such a system involves, says the Otago *Witness*, of New Zealand, which is advocating the establishing of agricultural schools there. In support of this contention one needs only to refer to the case of France. Fifteen years ago the country introduced a system of agricultural education, and has since increased the value of the crops by $500,000,000. Similar examples are afforded by Denmark and Belgium. The former had attained to her present eminence as an agricultural country through two allied lines of work, co-operation and education. Belgian farms produced $50,000,000 more annually than they did twenty-five years ago, and at a cost for every kind of agricultural education of not more than $200,000.

A SPLIT-LOG DRAG.

Every roadmaster should have a split-log drag and use it now and in the spring. Good roads are largely of our own making.

The drag should be light and should be drawn over the road at an angle of about 45 degrees. The driver should ride on the drag and should not drive faster than a walk. One round trip, each trip stradding a wheel track, is usually sufficient to fill the ruts and smooth the surface.

Dry Cleaning at Home

Keep Your Clothes Looking New Until they Wear Out

By WINNIFRED MARCHAND

MOST of our silk or wool garments, children's white furs or bearskin coats, light kid gloves, or anything made of an animal fibre which will not wash, can be dry-cleaned at home as well as a professional renovator could do it. In either a general soil, or a stain, the dirt is usually held in place by grease, so the cleaning agent used must be a grease solvent like gasoline, benzine, ether, chloroform or alcohol. Sometimes a fine powder such as flour or French chalk is used with the fluid, to scour out the dirt. Or in certain cases, the dry power alone may be used, it depends on the kind of soil and the goods as we want to leave the fibre with the original finish and dressing.

TO CLEAN A SILK OR WOOL GARMENT.

If there are any very dirty parts, rub them with dry soap, or French chalk, flour or corn starch; then soak the garment overnight in gasoline in a closed vessel, so the fumes don't fill the room. The reason so many people are disappointed in gasoline cleaning is that they expect the gasoline to work miracles. It is just as important to soak clothes in gasoline as it is to soak them in water for ordinary washing. Thorough washing is necessary, and thorough rinsing in clean gasoline is necessary, just as necessary as to rinse clothes in clean water before hanging them out to dry. It is also just as much easier to wash clothes inwarm,instead of cold gasoline as in warm instead of cold water. Only be careful how you heat your gasoline. *Gasoline should not even be used in a room where there is an open fire* as the fumes ignite very readily. The only way to warm it is to set the vessel containing the gasoline in a pail of hot water until it is as warm as the hands can bear it.

WHITE AND LIGHT COLORED KID GLOVES.

White and light colored kid gloves are washed in gasoline, just like a silk or wool article, but as they generally have some very dirty spots it is necessary to do a good deal of rubbing with a cloth dipped in flour or French chalk. When they are washed, rinsed and dried, white kid gloves should be rubbed with dry-French chalk to improve the color, soften the kid and prevent them soiling so easily again. Light colored kid or satin slippers clean well by rubbing with a cloth dipped alternately in gasoline and flour, finishing with good clean gasoline. The dirty spots on these slippers may be from dust, oil, or boot-black, which is taken out easily by rubbing on lard and letting it stand over night before cleaning with gasoline. Gasoline is a grease solvent so there is no danger of the lard leaving a grease

Diamonds for Grand Opera Stars

BASE metal is no fit setting for the golden voice of a great singer. So—in the new Edison Phonograph, the Reproducing Point is a Diamond.

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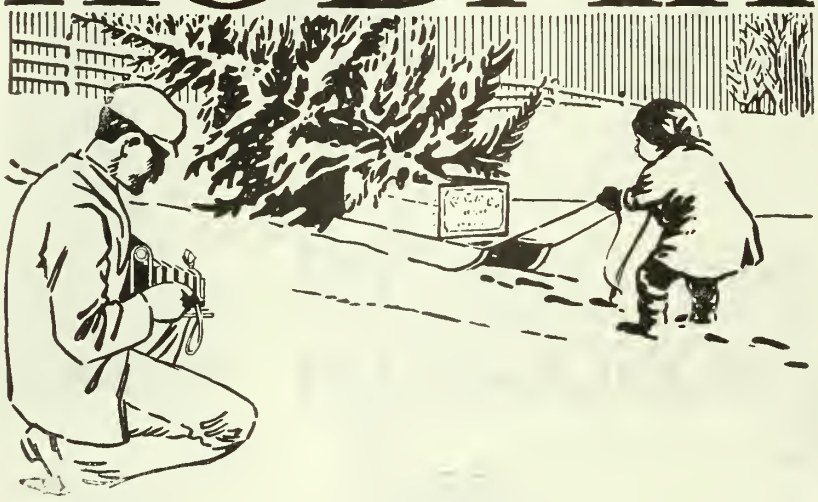

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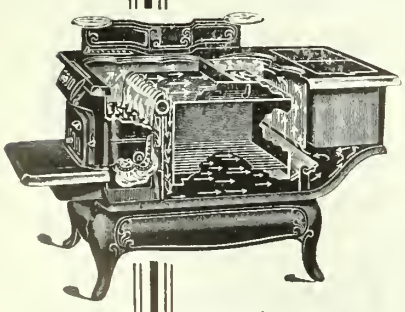

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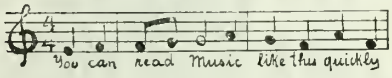

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Guaranteed Ghost

Continued from Page 33.

gradually took on a pale distinction from the surrounding shadows. He gripped the door knob and stared till his eyeballs burned. In another moment the something had assumed the shape of a human figure draped in sheerest whit. It seemed to float rather than walk toward him. Out of the shadows it grew, until quote clearly he discerned the tall, slim figure of a girl. The face he could not see. It was half covered with a fold of the robe, held against it by a small hand, ghostly white. It was not the pallor of death, but rather as if human flesh had been transformed into some transparent marble, beneath which life still existed.

He felt a prickling of the skin and a weakness in the knees. Across the hall he could hear stertorous breathing from the lady chairman of the Perkinstown Branch of the Columbian Female Occult Society.

Just as it drew opposite his door, the figure stood, hesitated and turned. Both hands went out in a gesture of infinite suffering, as if petitioning some obdurate deity. Then with slow and stately progress it glided back into the darkness from which it came. It did not seem to disappear, so much as to be gently merged into indistinction.

The next moment came a heavy thud and sound of choking from Mrs. Perkins' room.

Henry dashed across and found his mother in a crumpled heap on the floor. Presently she shuddered, and gazed fearfully about.

"Henry," she gasped, "Henry, did you see her?"

"Yes, of course, I did," he said uncomfortably. "Now you get into bed and I'll hold your hand till you're asleep."

If, for the next hour or two Henry Perkins could have been observed, he would have been seen patting his mother's fat and twitching hand and staring into the gloom with a most puzzled expression on his handsome face. Just as Mrs. Perkins dropped off into a fitful slumber, this expression changed into one of quizzical mirth and he stole across to his own room.

Morning dawned as they only can in the south of England. At exactly half-past nine he met Eva Studhope on his way to the village.

"Well," he remarked cheerfully, "it was a great success."

"Was it?" She looked shyly at him.

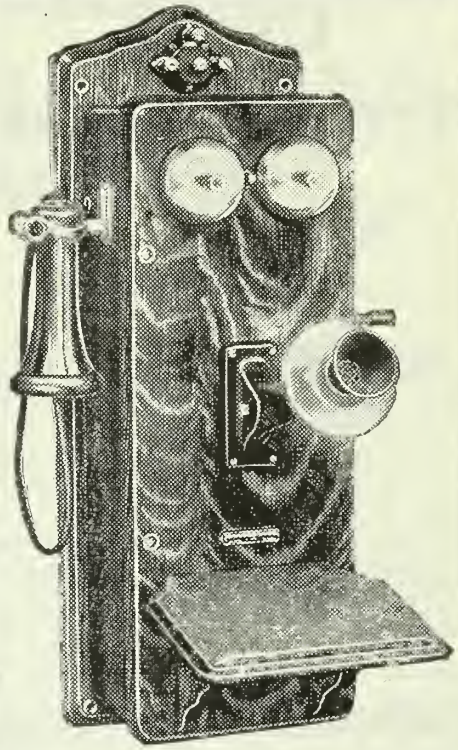
"Yes, sharp on time. A beautiful ghost! Exquisite figure! Mother fainted. Everything bang up to contract terms."

"I'm so glad she's satisfied." Eva's cheeks were pink.

"Satisfied! That's no word for it. She's cabling this morning. I say," he added slowly, "that ghost reminds me of someone I can't place."

"Ghosts often do," she remarked airily. "That's what makes them so interesting."

"Is there anyone in your family who went around looking for a lover?" he said suddenly.



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A gleam flickered through her eyes. "No one that I know of—you see—" she hesitated.

"Yes?"

"The girls of our family have never been reduced to that. Good morning, Mr. Perkins," she said proudly.

The month that ensued was December and a certain atmosphere of imminence hung over The Beeches. The colonel was palpably agitated. He lost, to a large degree, that air of decision, which should hang, like a cloak, round every retired officer. va was more than usually evasive. She capitulated several times to the invitation of the motor car, but was palpably absent-minded. Henry noted all this with wise, observant eyes. His mother was too engrossed in recording her experiences to be conscious of anything unusual.

It was in the car, with Eva at his left elbow, that Henry made a startling discovery. So startling was it that he slowed down till the machine only crawled.

"By Jupiter," he said explosively.

She glanced at him quizzically. "That's a planet, isn't it."

"No. It's an extraordinary co-incidence."

"What is?"

"That the fourth Monday in December will be Christmas Eve."

"I don't think that's very extraordinary. It will be again in three or four years."

Their eyes met and the color flashed to her cheeks. "I'm thinking of the ghost," said Henry thoughtfully.

"The ghost would be flattered," she answered daringly. "However, she would be wise not to take it very seriously."

"Why."

"Your lease is so short. Do you know that if I were an apparition I'd miss your attentions. English lady ghosts are as a rule rather neglected."

He leaned toward her. "Do you think," he began earnestly, "that—"

"Oh—" said Eva nervously.

"What?"

"You've just killed a rabbit."

"Damn the rabbit," he snapped. "Listen to me."

When they reached The Beeches Eva's ears were unusually pink.

Time drew on. Henry, if shadowed, would have been trailed several times to the local chemist, and once he made the run to London, at a rate that still lives in the memories of many peaceful and law-abiding citizens. For all this, time seemed to drag heavily for everyone, but at last the eventful day drew near.

On Sunday, Mrs. Perkins was laid by her heels with grip. Aching in every limb, she yielded only after a struggle. To Henry she gave full directions. Her door was to be left ajar, and her bed was wheeled into a convenient position. She was prostrate, but full of scientific and occult fervor.

Repeat, if you will, the same scene, only this time the night was darker than ever. Henry at 11.30 made certain preparations. Immediately inside his door was a small table. On this was a small machine and beside it a saucer with certain chemi-

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cal ingredients. They were not those usually used on Christmas Eve.

The clock struck twelve, but for a few seconds there came no sign. He held his own breath, till, through the throbbing in his ears, came something that sounded like a sigh. At the same moment he made out, quite close to him, the tall, white figure. It was apparently peering like himself, and leaned forward enquiringly. It saw him in the fraction of time, and involuntarily shrank back at the discovery. At the same moment came a click from the small table, and a blinding flash of light that pierced every cranny of the hall. In this glare he caught a glimpse of a chalk-white face, wide, blue eyes and outstretched hands. Then darkness dropped again and an acrid odor filled the house. It was all over in less time than it takes a man to find the tip of his ear.

"Henry," screamed his mother. "Henry, protect me. She's in here. I can smell her. Oh, God forgive me for meddling in such things."

A little later he emerged from her room, leaving Mrs. Perkins in a condition that produced intermittently both laughter and tears.

Christmas morning found Colonel Studhope in a state of peculiar agitation. His spirit was not in tune with the chimes. It is seldom that any retired officer has displayed such open symptoms of distress. And these, curiously enough, were vastly heightened by the receipt of a note from Mrs. Perkins asking that they dine informally that night at The Beeches. Followed a most polite answer, intimating that, while the colonel himself would have been delighted to come, it was to his great regret impossible, owing to the unfortunate and unexpected indisposition of Miss Studhope.

Half an hour subsequently a maid tripped over to the Lodge with another missive, in which Mrs. Perkins trusted that Miss Studhope would be sufficiently recovered by evening as there was a most interesting matter which it was desired should be discussed with them both. The outcome of which was that at 7.29 Colonel and Miss Studhope walked slowly and silently up the drive, and the colonel used several expressions which had nothing to do with Christmas and are only presumed to pass the lips of an English officer, when in action in the defence of his country.

Dinner passed off without anything more remarkable than seasonable international toasts and a spirited defence of the Monroe doctrine by Mrs. Perkins. It was not till dessert was nearly over that Henry said with an unaccountable lift in his voice: "There's a matter I'd like to discuss with you, Colonel."

The colonel nodded. "Of course, of course," he said, uneasily.

"You remember, no doubt, the condition on which we took The Beeches?"

The guest moved uncomfortably. "Quite distinctly."

"Well, sir, Mother and I want to congratulate you both on the complete way you have lived up to that guarantee."

The colonel swallowed an invisible

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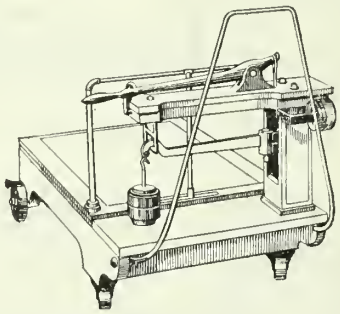

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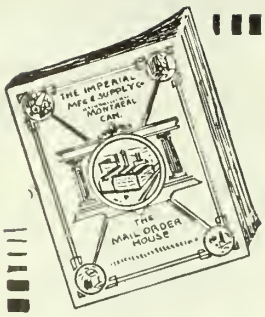

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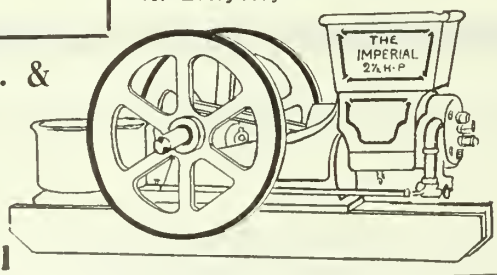

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lump. "Upon my word, that's very kind of you."

"Nothing could be more satisfactory than that ghost," went on Henry, with his eyes on Eva. "She passed all our expectations. Mother was not unnaturally a little nervous at first, but now—why—I feel a regular attachment."

Eva's lips quivered. "That's very extraordinary and daring of you. I never heard of anyone—" She hesitated and her lids fluttered.

The colonel shot a piercing glance at Mrs. Perkins, but her face was impenetrable. He turned to her son. "Do you mean, sir, that you like this ghost?"

"Like is hardly the word," continued Henry placidly, noting the trembling of Eva's wine glass. "She has filled me with mingled sensations of—of fear and affection."

Something bubbled up in the colonel and spilled over: "God bless my soul."

"Mother and I have talked it over, and, in short, we want that ghost in our family. Will you part with her?"

The colonel turned purple. "Part with her—do—do—do you imagine, sir, that I deal in spectres?"

"No, not as a general thing, but as for this one, if you will look for a moment at this flashlight photograph, the first one I believe, ever taken of a real ghost, you will understand how I feel. It's a regular Christmas illustration."

The colonel stared and spluttered. Eva glanced at it, then raised her blue lakes of eyes and fixed them steadily on Henry. "You—you—" Her cheeks were crimson.

"Yes, I," he said firmly.

There fell a silence in which Mrs. Perkins rose majestically, "Colonel, I guess we'd better let the young folks work it out together. Let us go to the billiard room."

Twisting Trails

Continued from Page 24.

He saw, standing by the table, a young woman whose beauty was more evident because of her surroundings but not detracted from by her alertness and self-possession.

"I beg—" the geologist began, when Milford angrily demanded as he stepped forward:

"What you want now?"

He walked threateningly around the table.

The girl noted that the stranger did not give ground before the woodsman but she wondered, as he spoke, and as she saw his air of preoccupation, if it were fearlessness or an absent-minded ignorance of possible danger.

"Just dropped over to call, you know," replied the geologist.

If Milford intended violence, he stopped as he saw George step into the door. Instead, he growled inarticulately and returned to his chair.

"Good evening," said the geologist to the girl. "I hope I have not intruded. I am—"

"Have a drink," broke in Milford, thrusting his bottle forward.

"No, thank you," replied the geologist, "I never touch it."

"Drink or get out," commanded Milford. "A man that don't drink's got no business in the bush, and no business here. Drink."

"But, really, you know—" began the other.

"Take drink for drink with me or get out," Milford screamed.

"Well," said the young man, reaching for the bottle, "since you put it that way, and since the company here is so pleasant, I'll drink with you, drink for drink."

"Wait," exclaimed Milford, as the other raised the bottle to his lips. "Fill this," and he pushed a glass across the table. The geologist filled it to the brim, as is the woods custom, and drank. Milford helped himself to a like amount and then pushed the bottle across the table toward George.

"Now that's somethin' like it," he beamed. "You'se first rock-tapper ever saw's was good fellow."

He pushed the bottle and glass toward the geologist again. It was filled to the brim and downed. The girl sat silently in a corner, watching the men. She was not frightened but she looked continually at the man Milford evidently addressed as a geologist, apparently trying to determine just what sort of man he was.

Milford took the conversation in hand and the visitor, although he tried several times, was prevented from saying anything to the girl. Milford orated at length, punctuating his remarks frequently with drinks, in which the other men joined.

Suddenly, in the midst of a harangue on the future of the district in mining, his head fell forward onto the table and his sentence ended in a heavy snore.

"Will you do me a favor?" asked Rea, springing to her feet and hurrying to the geologist. She had been the first to see that Milford could not be a factor in immediate developments.

"Most certainly," agreed the young man, startled by the sudden animation on the girl's part. "In fact, that is—"

"Then come with me at once," she interrupted, hurrying out of the door. He followed. George remained in his chair, looking at the bottle.

"Do you know where the Whisky Jack mine is?" Rea asked.

"Yes."

"Can you take me there immediately?"

"Why, yes, but—"

"Then call your canoeman and come at once. It is imperative that we hurry."

"But it is eight miles and getting late. Don't you think we had better wait until morning. There is no danger for you here," and he pointed to the cabin.

"No, no," cried the girl, looking into the darkness over the lake and listening for a moment. "If we go, it must be at once. Don't let us lose time. We can talk on the way."

The geologist was silent for a moment, thinking.

"George," he finally called.

The canoeman came out of the door and the girl led the way to the water. On the sand she stopped and listened. Fowler

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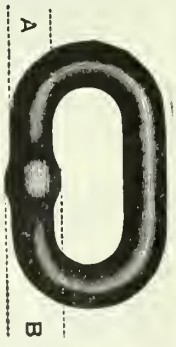

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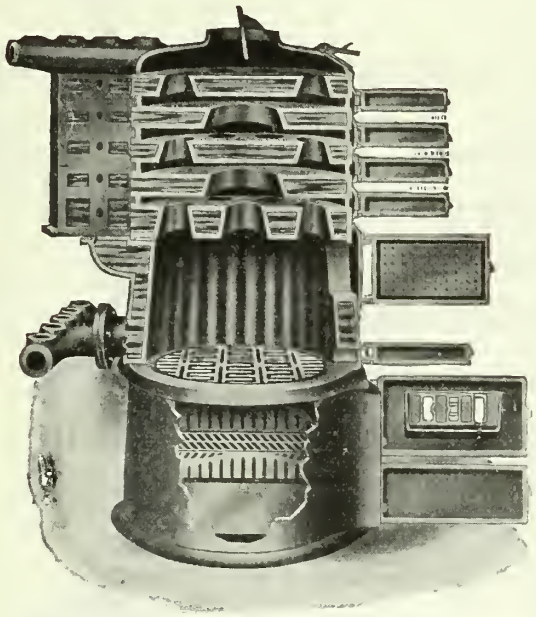

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had said he would return Thursday night. Then they caught the faint sound of a paddle against the gunwale of a canoe.

"It is too late!" Rea cried, grasping the geologist's arm and hurrying back toward the cabin. "Come, quickly."

She led the way up the bank.

"Let me advise you to spend the night here," the geologist again suggested, "and allow me to take you to the railroad in the morning. You see, I know something—"

"No, no," said Rea. "It is kind of you, but you don't understand. A great deal depends upon my getting to the mine at once, as quickly as possible. Will you take me?"

The sound of an approaching canoe became more plain. She laid a hand on his arm.

"Please," she said.

Her face was upturned near his. In the dim light he could see in it anxiety, suspense.

"Yes," he said slowly. "Come with us. Our canoe is across the island," and he led the way down the trail behind the cabin. As they disappeared in the darkness a canoe grated on the sand and a man stepped out.

"Milford!" he called, looking at the lighted cabin.

"Milford!" he repeated.

There was no reply, and he hurried up the bank. Then, cautiously, he crept to a window. Inside he saw the woodsman, arms outflung and head down on the table. Through the open door he could hear his heavy breathing.

The man rushed in and shook him.

"Milford!" he shouted. "You fool! Wake up!"

One glance at the open doors of the two empty rooms and he turned savagely.

"You drunken fool! Wake up! Where's the girl?"

CHAPTER VII.

THE canoe passed silently, quickly, from the island and then circled around it. When out of hearing distance, the geologist smiled:

"And now, captain, what are the plans?"

"Of course, in this deserted country," Rea replied, "I can't very well have a sanity commission appointed to prove that I am in my right mind. Will it be too much to ask you to believe it, just on my own assertion?"

"My dear young lady, insanity never accompanies such a determined chin. But we are begging the question. It is not your sanity but your wisdom that I have questioned."

Rea gauged him thoughtfully. This man was not a silly boy to be led aside by light badinage. Rather he must be a one-idead scientist, always asking why and always reaching the heart of things. But he had shown himself a generous one and that would again have to be her protection.

"I know," she whispered, "that this is not customary. But I shall again have to ask a favor. I know you are a gentleman and by that I know you will be satisfied that you are in the right. A great deal depends upon what I have to do to-night.

There is no danger connected with it. I can't explain more, even if it were wise to talk out here on the water."

"That is perhaps all I have a right to ask," agreed the geologist.

Evidently the girl had some plan which she was intent on carrying out. She had shown that she had courage and he decided that he would not detract from anything she might hope to do.

"I must ask you," he said, however, "that you promise not to expose yourself to any danger."

"I promise," Rea replied, as they slipped along in the darkness.

She could occasionally see the strong profile of the man as he bent to the paddle. It was generous of him, she thought, to put himself in her service and he had a disconcerting way of going directly at a thing when once awakened. But something must be lacking for a man of his age to settle down to the study of rocks. However, he was the mean to an end and it made no difference to her whether he tapped rocks or sold bonds.

But, in spite of herself, again and again returned this inexplicable desire to fit the man to the work or, rather, the work to the man. If only, she thought, he were not just an academic geologist. She had heard that some geologists had real experiences, were concerned in big deals. The thought bore a train of doubts. What if, after all, he were a mining geologist? There was only one mine in the vicinity. Had she played into Fowler's hands?

But a glance at the strong face before her dispelled her suspicions. It was too frank a face. She gave herself a little shake. These groundless doubts were unlike her and she turned to watch for the dim shore line.

George beached the canoe under some dark rocks two hundred yards from the mining company's dock. The geologist stepped out and helped Rea to her feet.

"I have one more favor to ask," she said. "Wait for me here. I will not be gone more than half an hour. I can't explain, but you will do as I ask?"

The geologist hesitated.

"No," he said. "I fear you are taking a risk. Can't I accompany—?"

"No, no! You must not," exclaimed the girl. "Please remain here."

She ran up the bank before he could reply.

If Rea had never been at the mine before, she showed a surprising knowledge of the location of the buildings. Passing the warehouse at the dock, she went on up a dark road, passing a store and a log hotel. Nearly a quarter of a mile from the lake she turned off the road to a trail that led to a cabin set on a slight rise. The windows were dark, but the door stood slightly open.

Cautiously pushing it back, she entered. For a moment she stood perfectly still, listening. Certain that no one was asleep within, she walked quietly across the floor to a table beneath a window. First drawing the shade, she felt on the table for matches and a lamp. Finding both, she struck a light and looked about her.

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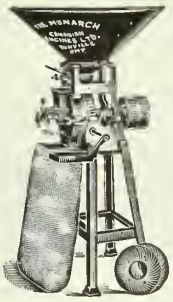

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papers piled about in profusion. Beside the desk was a small safe.

"Nothing difficult about that," she murmured.

She ran quickly through the papers and letters on the desk. In a drawer she found a revolver, which she examined and replaced.

"They would be only in one place," she thought, as she turned to the safe.

On her knees before the door, her head bent that her ear might be near the lock, she began slowly to turn the bright, steel knob. For a minute she turned it carefully. Twice she heard a faint click and a smile of satisfaction displaced the frown of close attention.

There was a final click and her smile ended in a little laugh, which was silenced in a moment when she heard the knob of the cabin door turned.

Springing to her feet, she reached quickly for the lamp on the desk. The door opening behind her told that she was too late. Instead, she pulled open the desk drawer, reached within, and wheeled, the revolver in her hand.

There stood the geologist. He looked gravely at the girl, waiting for her to speak. But she remained silent, the weapon pointed at him.

"I have come to warn you that someone is coming across the lake," he said.

"You promised not to follow me. I trusted you."

"I am sorry, but I did not understand and I thought that you would be interested in knowing that someone is coming to the mine in a canoe."

Rea lowered the revolver.

"I could have taken care of myself," she said. "I wish you would return to the shore and wait for me. I know it is a great deal to ask and that you must take much for granted. But please do so."

"Listen, Miss Sumner," almost commanded the geologist.

Rea started but did not speak.

"My name is Stover," he went on. "I was employed by your father to rescue you from Fowler or whoever he hired to kidnap you."

"How did you find me so quickly?" she demanded suspiciously.

"I received the wire yesterday afternoon in Port Arthur, caught a train and left Vermilion this morning. I knew that the most probable tool of Fowler would be Milford. If you had been kidnapped, as your father suspected, Fowler would not be concerned directly. He is too clever for that."

"But Milford didn't recognize you."

"No. He never saw me. He came to this district since Fowler did. He was mixed up in a bad gang in Cobalt and, when I heard that he was near here and that Fowler was running the Whisky Jack, I pieced together several stray bits of information and saw the reason. Fowler needed him here."

"Why didn't you tell me before that my—my—father had sent you to search for me?"

"You hardly gave me time," he laughed, "and I thought, from your manner and actions, that, perhaps, you had some information that would help you in fasten-

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ing your kidnapping on Fowler. I admired your pluck, and I knew that I could protect you, with the aid of George. Then, you promised not to run any risks. You were proving a capable leader and I was content to follow. Now I believe you are in real danger."

Rea considered him in silence. He spoke plausibly, he appeared to be honest, she wished that she could trust him. But there was one gap, one big hole, in his story. How did E. G. Sumner know that his daughter had been kidnapped when, in reality, she was safe with the Heatleys, wholly unconscious of what she had so narrowly escaped? With Helen Sumner safe, there could be no reason for her father sending someone to search for her. These thoughts required only a fraction of a second to rush through her mind. Then she asked:

"Did you see Mr. and Mrs. Heatley? They must have worried so."

"Mr. Heatley had just left Vermilion when I arrived. He was like a wild man, they told me in town. Mrs. Heatley is at the camp from which you were abducted. One of the men told me she was the only cool person in the outfit. They have employed every man they could find, white and red, and they have searched every bit of the bush near the camp. We really, for Heatley's sake, should get back as soon as possible."

As he spoke, Rea's first feeling was of admiration. He dissembled so thoroughly that she, an expert in the art, felt that she had met a superior artist. And yet there was the haunting sensation of truth. She studied his face closely, trying to find some little thing that would betray him.

"I am in your father's confidence," he went on, "and responsible for your safety. If there is anything in which I can help you, I will be glad to do it. What is it you are after there?" and he pointed toward the safe.

"Fowler has been filing false reports about the mine," she replied, looking closely at him. It was a guess on her part, and it might show a crack in the mask of his honesty. Then, it was as good an explanation as any. "He has the true reports of the assayer. I am looking for them. He is trying to discourage my father and force him to sell. Probably he or some confederates expect to buy. When did my father learn I was kidnapped?" she asked suddenly.

"I don't know," Stover answered. "As I said, I was in Port Arthur when I got his wire yesterday. How long had you been on Milford's island?"

"Since Tuesday night."

"I was doubly interested in this errand," he continued, "not only on your father's account but on that of Jerry Forbes. I have known Jerry many years and he has written to me about you. I have sent my congratulations and now I am going to supplement them most enthusiastically."

He expected to see the girl blush but she did not. She was too busy thinking. Was this a trap? Yet he could not suspect anything. It was impossible. And yet, if he had just come from Vermilion, he must have known that Helen Sumner was

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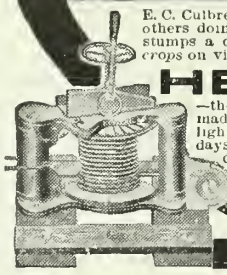

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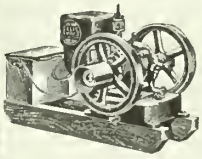

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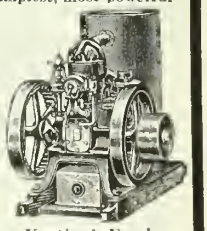

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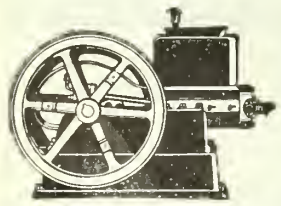

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not lost. Only one course was open—to continue to let him think that she believed him.

"I have heard Jerry speak of you often and you are very kind," she said. "But, if someone is coming across the lake, it undoubtedly is Fowler and we must hurry. It will be much easier for me to get the papers while you watch the road from the lake. When you whistle I will step out and meet you."

"You must hurry," warned Stover, as he left the cabin.

Rea turned immediately to the safe and swung open the heavy door. It was empty except for some ledgers. The small door of the inner compartment was locked. Her first glance around the cabin fell on an ax in the corner and near the door. She brought it quickly and struck the lock a heavy blow. Then she inserted the bit in the crack and pried open the small steel door.

There was only one package in the little box, one long and thick and tied with red string. From her woolen outing skirt she pulled one exactly like it, compared the two for an instant and then slipped both into the front of her shirt.

With a quick motion she closed the doors and rose to her feet. But, as she reached the center of the room, there was a step outside.

There had been no warning whistle. It must be the geologist returning to report new developments or—

She could not afford to take chances. In a moment she had crossed the room. As the door opened, she had her back toward it and was looking at a shelf of books and mining periodicals.

"Good evening."

She turned to see a man looking at her with puzzled eyes. His voice was that which she had heard on the beach the first night at Milford's cabin.

Plans rushed through her mind. One slip would mean ruin. Was he puzzled to see that she was not Helen Sumner, or did he believed her to be Helen Sumner and was puzzled to know how she had reached the mine? Or had he discovered that Helen Sumner had not been kid-napped—the Heatleys should have reached the mine by this time—and who did he think she was? Had he heard that Milford had taken the wrong girl? That meant instant disaster.

Her only chance lay in carrying through the role she had assumed with the geologist. It was a gamble, the odds twenty to one, but she must wager.

"Good evening," she said, coolly. "I am Helen Sumner — as you probably know. You are Mr. Fowler, I presume."

To Be Continued.

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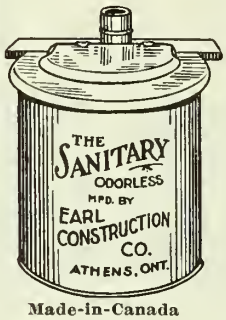

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Parmelee's VEGETABLE Pills

The Safety First Chicken

Continued from Page 18.

Where chicks are being raised in large numbers, we believe much trouble can be prevented if all specimens showing the least tendency to contagious disease are removed immediately from the others. How hard it seems to the inexperienced to kill off any sick stock for the sake of the others. We fully believe that 50 per cent. of the losses in young stock could be prevented if those showing sickness were removed or killed the moment signs of illness appeared. It is better to kill one sick bird than to take a chance of losing dozens that might be most excellent specimens.

If all people would appreciate fully this fact the country would have a much larger poultry crop to record and more good breeding specimens for the next season's operations. After the hatching is over we find most people give their poultry less attention than perhaps any other time of the year. This is a great mistake for there perhaps is no period of the year that is more trying to the birds than the hot summer months. Fresh water, shade, proper non-heating food are most essential now and above all quarters that are sweet and clean, wide open to all the fresh air they can get. It is not reasonable to expect that the stock may be neglected for a couple of months and then extra care may be given with expectations of the best results. No, the care must be given all the year round or the greatest possibilities cannot be realized.

One of Mr. Marshall's colony houses, with a bunch of cockerels. Frequently 25 of these cockerels are kept growing during the winter with doors wide open and snow outside. Note the burlap window.

When the breeding season is over it is time to begin to think of the next season and do everything possible to prepare the breeders for the next year's work. They should be started on their moult early enough to have them entirely through before it is time for cold weather. If specially early chicks are desired the birds that are well moulted early and put in prime condition so that they can lay strong well fertilized eggs are the ones to use, for they only will be the ones that can produce strong embryos from which to get vigorous chicks in the late winter or early spring. By giving the closest attention to this a whole season's work can be much improved.

This is a most excellent time to observe which are the most vigorous for where there is any likehood of weakness it will generally show itself when the strain of moulting is on. At this time if those having any difficulty or showing weakness are discarded the product for the next season should be considerably improved.

Many are the ideas and appliances offered to improve the possibilities in raising poultry. Many of them are most practical and helpful and any plan that proves itself as one that increases the results is well worth adopting, but we think if each poultry raiser would not neglect to supply those needs that he knows are necessary and will be sure of giving bigger returns and better grown and finished stock the crop would be considerably increased and be of much better quality and higher value.

Let 1915 prove to be one of well-thought-out plans carried to completion so as to get the maximum possible results with the knowledge and equipment available. Only in this way shall larger results be possible

Things Your Mother Did Without

Continued from Page 15.

didn't know that the farm could be made any different for women than I had always seen it. I never thought of the life as drudgery, because we had quite a lot of comforts, but I knew that it meant hours, and some heavy work and a certain over-common tiredness that soon comes to a women with cows to milk, and water to carry, and butter to churn and clothes to wash, and bread to bake, and hired men to cook for, and children to care for, and sewing to do after the rest of the day's work is put away. I didn't know then that it could be made so much easier, because even the wealthiest farmers around, who drove their wives to church in silk dresses and rubber-tired carriages, never thought of spending any money on the house except where it would show.

"Then Mary was a bright girl, and fairly well educated, like most of the farmers' daughters, (they generally have a year or two longer at school than their brothers), but I had noticed that after they were married ten years or so, most of them dropped all interest in everything except their work. They could hardly help it. So I didn't like to think of Mary going into that. With the things we have here, it would be different but I'm afraid most of the neighbors would consider the cost of this out of all reason."

Maybe they would. It amounts to something over half the cost of a low-priced automobile, and the farm auto is becoming very common. Of course, you think that if it makes so much difference,

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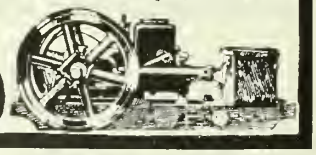

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from a woman's viewpoint, when you have a farm and a house of your own, you will have an electric motor run by a gasoline engine to light the house and work the washing-machine and vacuum cleaner, the electric iron and various cooking appliances, and perhaps a fan to cool the house on hot days. It's a good thing to have ideals and to have them early, and this isn't altogether an impossible one. It would mean the investment of a few hundred dollars with no financial returns, but that isn't the sole purpose of living after all.

Clearing $10 a Hog

Value of Skim-milk in the Ration and What Will Take its Place

By ERNEST LIVINGSTONE

TO MAKE money from feeding livestock, the feeder must be taken into account as the first requisite. One man will make good money, keep his animals growing all the time, and pay out little for outside expensive feeds. Another will pay out nearly as much for grain as his returns come to, and besides never have a thrifty choice animal.

Especially is this true in hog feeding. I have learned the value of the personal element in the feeding equation. I have just finished feeding two Yorkshire sows for the local butcher and my returns prove to me that hog feeding pays.

These hogs were fed from the kitchen wastes, skim milk and a mixture of meals, with a mangel apiece each day until near the close of the fattening period.

Of course it is easy to get results with two pigs, easier perhaps than can be secured from a bigger bunch where the skimmed milk and kitchen wastes would not cut down so largely the feed bills. However, these pigs received about the same attention as would be given to a bigger lot and the returns show good profits. They were lengthy pigs, pure bred, and never had a setback at all. The big trouble, I find, is producing pigs for returns is in getting the young fellows safely over the period from weaning to about the 75 lb. period. Check the pig's growth at this point, and it will cost almost double to get him into the market. These pigs showed no signs of the change. Their digestive organs were kept in first-rate condition all the time.

The costs were as follows:—

2 pigs at $2.50 at 6 weeks =	$5.00
900 lbs. mixed chop at $1.40 per per cwt. =	12.60
Total	$17.60

SELLING FIGURES.

The selling returns from the local butcher were at $8.25 per cwt. live weight. The pigs weighed 234 and 240 lbs. Thus the receipts were $39.10.

Total gain then for my labor, of feeding and price from waste and skimmed milk was $21.50.

Thus the farmer who raises his feed and gets the growing period largely paid for on pasture such as alfalfa, the returns will show about $10 a hog profit for the work and milk as well as paying good prices for the grains. These grains had to be hauled from the mill. In the case of using farm-grown grains, the expenses of hauling would be eliminated, and the whole of the selling price returned to the farm pocket book for products and labor.

The question naturally arises why not duplicate these two pigs many times and so make big salaries. And no doubt it can be done, where the skimmed milk or a substitute can be supplied.

Experiments have been tried at the various experimental stations to show the value of skim milk in the ration and the possibility of a substitute.

Henry in Feeds and Feeding summarizes the results of 19 trials with 86 pigs at the Wisconsin Experimental Station. He found that when a small proportion of skimmed milk is fed along with the meal, greater values for the skimmed milk were made.

His tables show:—

MEAL EQUIVALENTS OF SKIM MILK.

Proportion of milk to meal—	Lbs. of milk to 100 lbs. meal—
1 lb. cornmeal, 1 to 3 lbs. milk	327 lbs. of milk equals 100 lbs. meal.
1 lb. cornmeal, 1 to 3 lbs. milk	446 lbs. of milk equals 100 lbs. meal.
1 lb. cornmeal, 5 to 7 lbs. milk	574 lbs. of milk equals 100 lbs. meal.
1 lb. cornmeal, 7 to 9 lbs. milk	552 lbs. of milk equals 100 lbs. meal.
Average 19 trials	475 lbs. of milk equals 100 lbs. meal.

But these results are attained in a corn country with lard hogs. Let us come home to Canada. Prof. G. E. Day, of the O.A.C., has tried out this thing at Guelph. He reports 355.6 lbs. of skimmed milk as equal to 100 lbs. meal. In this the proportion of milk to meal was 2.5 to 1.

The experiments all show that where skimmed milk can be obtained conveniently and in suitable quantity it has a very considerable value in hog feeding.

When meal is worth $20.00 per ton, skimmed milk is easily worth 20 cents per 100 lbs.

SUBSTITUTES FOR MILK.

The Ontario Agricultural College conducted two trials with Swift's digester

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O-Cedar Polish Mop

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Mothers everywhere and all housekeepers just love the O-Cedar Mops because they bring so much relief from the hardest work of housekeeping. No more tired and worn-out women in the homes that have an O-Cedar. They take away the hard, tedious, bending, stooping and reaching of constant cleaning and dusting.

Use O-Cedar Polish

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If you would have hygienically clean furniture and have it as sparkling bright and pretty as the day it was new, use O-Cedar Polish this way:

Wet a piece of cheese cloth in water, wring it almost dry; then pour on as much O-Cedar Polish as the cloth contains water. Go over the surface to be cleaned, and Polish with a dry cloth. You will have a high, hard, dry lustre.

Get a 25c bottle of O-Cedar Polish, try it this way and if you are not delighted with the result, your dealer will refund your money.

O-Cedar Polish is a vegetable compound and mixes freely with water. It is more economical because you use half O-Cedar and half water.

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If you will inquire into the success of the younger men who have been promoted over you, you will find that they have been preparing themselves for this promotion by training and securing a better education in their spare time. This enabled them to command higher salaries.

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If you are one of these, write us and let us tell you about the course of training we give our representatives.

We have the brightest and most energetic men in Canada today representing MacLean's and Farmer's Magazine in their spare time. They find the work not only profitable, but a real training in itself. You too will find it equally as valuable.

WRITE US TO-DAY

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tankage and blood meal as substitutes for skimmed milk. These two feeds proved nearly equal in value, and, since, the tankage costs less per ton, it, was regarded as the more satisfactory.

The average of the trials showed that to produce 100 lbs. of gain, it required:

375 lbs. meal and 34 lbs. tankage.

390 lbs. meal and 727 lbs. skimmed milk.

The pigs getting tankage ate their feed quite as eagerly as those getting skimmed milk and continued thrifty throughout.

The Michigan Experiment Station in comparing tankage with skimmed milk for young pigs, claim that the pigs fed on skimmed milk made slightly larger gains, but that when the milk was valued at 20 cents per 100 lbs. and tankage at $2.62½ per 100 lbs., the tankage-fed pigs made cheaper gains than the skim-milk pigs.

Pig feeders who feed for profit must, therefore, inquire into feeding costs and savings in little things. So the careful man who watches his pigs' health, and studies to feed with the end in view of getting the best results, will make good returns from hog feeding at the present prices and come to the same conclusion as the Manitoba farmer quoted recently in FARMER'S MAGAZINE, who said that with hogs selling at 6½ cents a lb. he could make more money out of his wheat by feeding it, than by selling it.

Beef Cattle Futures

Continued from Page 12.

tario and Quebec. It embraces Wisconsin, Michigan and much of Minnesota. Here cattle-raising would be profitable, but the industry is making scant progress and no material accession to commercial beef supply can be expected from that quarter. At present it contributes an annual crop of inferior stocker and cheap beef cattle, color proclaiming its dairy ancestry and conformation rendering it valueless for profitable finishing except for the purpose of the Pennsylvania tobacco grower, to whom manure, not beef, is the main object. Such bovine rubbish accentuates the absurdity of the calf conservation theory as a means of increasing beef supply. Like topsy they "just grow" in their natural environment and a feeder attempting to fatten them would warrant incarceration in a padded cell. Mongrel cattle can be most profitably marketed by the veal route and are worth more at the 150-pound stage than as yearlings. If corn belt feed lots are to be filled each season as in the past the necessary supply must come from the South-western and trans-Missouri grazing area.

Next to the United States Canada offers the best sphere for beef production on the continent. Mexico has been much touted, but is not to be considered as a beef maker, its contribution being mainly stock cattle. Not many years have elapsed since the great grass region west of the Red river was reasonably full of cattle. These herds succumbed to wheat raising enthusiasm, but the exigencies of agriculture will reinstate them. No such cattle reach the Chicago market from any point of the compass as the occasional driblet that comes from Alberta. They outsell even Montanas, and if corn belt feeders could get access to stock of that character it would be given substantial price preference to the fine-boned stuff raised in the South-west. The northern-bred bullock has distinctive qualities. His luxuriant coat renders him superbly adapted to open lot winter feeding, a common corn belt practice, and he possesses the faculty of putting three pounds of beef on his ribs where the southern-bred animal gains two. The corn belt could absorb an incredible number of such cattle and with its wealth of feed, especially roughage, the Canadian West could be in no better business then. Montana is seeing the light and the Canadian wheat raiser will consult his own interest by dividing his attention with cattle.

Ontario, Quebec and the Eastern provinces possess a cattle-growing capacity that is being neglected. Wherever summer grazing exists and hay can be put up for winter care a cow will raise a calf and that calf, provided it has decent breeding, will find a ready market in the grain-raising sections of Ontario, Ohio, Pennsylvania and New York. Good calves at weaning time are now worth $30 to $40 per head and as demand for fat yearlings is steadily growing a profitable market is assured. The Highlands of Ontario could be developed in this manner and the entire Laurentian region is more or less adapted to the production of young cattle.

Mexico prior to the Madero revolution was a good stock cattle prospect but it has gone glimmering. Internecine strife south of the Rio Grande has arrested for an indefinite period the process of improvement which had barely started five years ago. Such stock cattle as Mexico is sending to the United States are proving bad actors. They are cold-blooded, lacking the capacity to stretch so essential to profitable grazing or feeding. By a count of tails Mexico may figure somewhat conspicuously as a cattle producer, but the statistics are unveracious, especially from a beef standpoint. Down in New Mexico recently a sheriff was recounting his prowess as a cattle-thief catcher. "How did you do it? asked an amazed auditor when told how he had recovered 500 Mexican steers and put the thieves behind the bars. "Easy!" responded the sheriff. "You see they got the cattle into their pockets but the horns stuck out, making detection easy."

Expunging Rhodesia, Zululand, Kam-

chatka and sundry other more or less exploited beef supply prospects the list of foreign sources is reduced to South America and Australasia. Outside Argentina, Uruguay and Paraguay none of the South American countries produce an excess at present and quality of their herds is poor. Great Britain needs the bulk of Argentina's output and probably will. Very recently the Chicago packers sent a scout to Venezuela, but his report was decidedly pessimistic. Australia's fickle climate is a production handicap and as a source of relief for actual and impending scarcity in the United States or Canada is not to be seriously considered. Wherever grain-raising or dairying is possible either in South America or Australasia the beef steer and the sheep will be supplanted. Everywhere the tendency is to restricted production and increased local consumption. American packers pursuing their fixed policy of controlling the world's beef supply have spent immense sums in acquiring slaughtering facilities in South America and Australasia, but the judgment displayed by such investment has been questioned, an opinion existing that more satisfactory results would have been attained by stimulating domestic production.

Disease has been the sole factor responsible for declining hog production. The late P. D. Armour once asserted that minus cholera hogs would not be worth a dollar a dozen, but conditions have changed and growing scarcity of beef and mutton makes over-production of pork improbable. Veterinary science has done much to relieve growers of the cholera handicap and present indications are that there will be a decided and much needed increase in hog-raising all over the United States and Canada during the next few years.

Mutton has been acquiring importance as a food product recently, but various factors have been responsible for depletion of flocks both in the United States and Canada. Fortunately rehabilitation of this industry is more speedy than in the case of cattle. Such regions as Alberta, Saskatchewan, Montano, Idaho, Wyoming and Utah are capable of vast increase in production of both beef and mutton and all that is needed for this accomplishment is stable markets. A world-wide scarcity of wool is a certainty and as the sheep is a two-crop yielder annually its popularity ought to grow. Increasing beef production is a slow process but a sheep flock is created in two seasons. Canada ought to be one of the principal wool and mutton producing countries of the world and the opportunity to get into that business is luminous. No foreign supply of mutton adequate to meet domestic deficiency is in sight.

We Americans, and the term embraces the two North American nations, are meat consumers racially. Nature has endowed the part of this mundane sphere allotted to us with every facility for producing an adequate supply. To quote Mulberry Sellers: "There's millions in it." Essentials to production stimulation are a square deal by the banker, good transportation facilities and stable markets.

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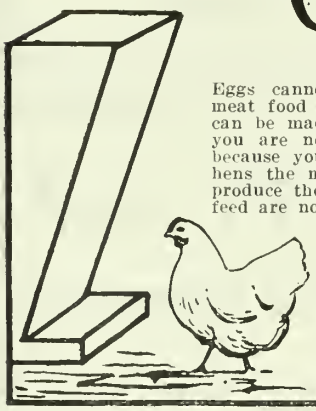
Getting Eggs?



Eggs cannot be made without meat food any more than butter can be made without cream. If you are not getting eggs, it is because you are not giving your hens the materials they need to produce them. Grains and green feed are not complete egg-making foods. In the natural egg-laying season — the summer — hens pick up bugs and worms. These contain the necessary protein to make eggs. In winter Shur Gain Beef Scrap takes the place of the natural meat food (worms). It, too, has the necessary protein. We issue a free Poultry Book—a complete book of instructions, showing clearly, among other things, how to feed for winter eggs.

Write for a copy to-day.

Gunns Limited West Toronto

Shur Gain Beef Scrap

BLUE ORPINGTON HEN
Bred by H. Corrie
2nd prize, CLUB SHOW, CRYSTAL PALACE, 1913, only time shown

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best BLUE, BLACK, BUFF or WHITE ORPINGTONS or CAYUGA DUCKS, write stating full requirements

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Aadress your correspondence to the Travel Department.

The FARMER'S MAGAZINE

143-153 UNIVERSITY AVENUE, TORONTO, ONTARIO

Unadilla's New House

Continued from Page 8.

long narrow bed of peonies and perennials parallel with the walk, and a rose garden extending from here to a row of shrubbery along the driveway. All along the front, and on either side of the walk are large spruces, with some handsome old specimens of cut-leaved maple and birch growing farther up the lawn. The diagram gives some idea of the layout of the grounds, but it cannot leave any impression of the charming effect of the irregular stone-work, the dark green shade of the evergreens, the grandness of the big birch and maple, and the masses of color glowing from every corner on a summer morning.

During the summer Mr. Green won twelve medals at horticultural shows in competition with professional gardeners. He also won the gold medal for taking the most prizes during the year, and the silver cup from the Toronto Horticultural Society. New varieties of flowers and vegetables are tried out in experimental plots before being planted in the permanent gardens, and it is believed that the collection of hardy flowers planted here has no peer in Canada.

THE ROSE GARDEN.

Perhaps the rose garden is even more interesting than these, however. All except the tea roses are planted on a heavy clay soil, fertilized liberally with barnyard manure and some wood ashes. Mr. Green believes that it is impossible to fertilize a healthy rose too heavily. The slips are planted two inches below the graft and suckers are kept cut out. In the spring they are pruned low, to about three or four buds from the bottom. When the blooms begin to fade they are cut down to a good bud which starts another crop. Where a hardy variety is wanted for planting around a farm house, Mr. Green recommends the hybrid perpetual. These are not really perpetuals, that is they don't bloom throughout the whole season; the hybrid teas are the only perpetuals in hybrid roses, the freest autumn bloomers, and the class that growers are developing more than any other just now. The preparation of the roses for winter is left as late as possible before the ground freezes. Then the branches are tied together and the bushes hilled up with soil to a depth of ten inches, and when this freezes it is covered with coarse manure.

We said that this was an unusual place, and it is. But it's just an example of the type of farm home that Canadian agriculture is coming to. Of course few farms will develop side lines on such a large scale as this, but the Canadian farm is becoming more and more a place where financial and industrial interests are combined with a consideration for comfort and beauty and higher life, if you like to call it that.

All questions from our subscribers are welcomed. Write plainly on one side of the paper. If personal reply desired, send stamp.

Rural Mail Enquiries

Address all letters to Grasmere, Farmer's Magazine, MacLean Publishing Co., Toronto.

AFTER EFFECTS OF DISTEMPER.

T. J. R., Ontario: I have a horse that suffers from swelling of the legs. They swell up then go down. He has a good appetite. He had an attack of distemper a few weeks ago.

Answer: The distemper has in all probability left your horse with a poor circulation. Keep him in a box stall. Exercise out doors daily and bandage his legs from the hocks and knees down. Feed a dram of saltpetre and dried sulphate of iron once a day in his feed for a week.

GARGET.

R. L. G., Quebec: I have a small herd of Holsteins that have been much troubled with their udders. Often one-quarter is caked. They give lumpy and often bloody milk from that quarter. The cattle have been fed bran, and mixed meal and clover hay in the barn and have been running on the cornfield during the day.

Answer: It may be that your cows have been eating too many immature and green cobs of your ensilage corn. Any sudden change in the feed may bring on this trouble. Keep them away from the corn. Feed each cow affected, a tablespoonful of saltpetre daily for three days. Milk well and rub udder with a mixture of one part mercurial ointment and two parts soft soap or lard.

NURSERY STOCK.

T. B., Ontario Co., Ontario: I bought some nursery stock last year from an American firm. The stock was long in transit and fumigation seemed to have weakened the stock. What are the regulations re importation of stock?

Answer: It is a frequent complaint of growers that such things happen. To our minds there is no need of so much delay. Fumigation should be done under inspection of consignors and goods sent through to destination duty paid, so as to insure no delays. The Dominion Agricultural Department have issued a special bulletin which will be sent free to all applicants.

TAME RABBITS.

Mrs. F. N. R., Sask.: Let me know where I can purchase tame rabbits. Also give me some information on the care of them.

Answer: There are several dealers in rabbits in each of the provinces. These can give you prices and information as to varieties. Practically all you ask is contained in Jno. Bartlett's article on rabbits in the August number of FARMER'S MAGAZINE.

HIGH TAXES.

A. H. T., Ontario: Do you not think $30 is rather a high tax to pay for my 50-acre farm in this township?

Answer: Farmers generally have not been highly taxed for municipal purposes. Taxes this year seem to be swelling up in all parts. In parts of Essex, taxes run about $1 per acre. In other places they go as low as 40 cents an acre. Even as high as $4 has been paid where special drainage work is needed. As a rule, the rural man pays less taxes than the city man. Many a resident in town is paying $20 a year frontage tax for local improvements on a 30-foot lot, while the other taxes run to $60 or $70. If farm roads and conveniences are to come, higher taxes are no doubt inevitable. Farmers should study their township financing better.

WARTS ON COWS.

T. O. B., Manitoba: Some of my cows have warts on the face and neck. What or how can they be removed.

Answer: The best and easiest way is to thoroughly rub the wart-covered part with best cold pressed castor oil twice a day. Goose-grease, if fresh, often answers. The warts will soon disappear.

MARQUIS WHEAT.

J. K., Alberta: Was it true that our Western champion grower of Marquis wheat was beaten at the Canadian National Exhibition by an Ontario grower of Marquis wheat?

Answer: Yes. Mr. Cowan, of Scarboro, won the $100 prize against all comers.

SOWING SWEET CLOVER.

A. J. R., Ontario: I intend sowing several acres of sweet clover next spring. Kindly advise me as to harvesting methods.

Answer: The report of the Kansas Experiment Station on this question will answer you. Threshing can be done with an ordinary machine, if no clover huller is available. The report says: "Where seed crop is desired the second cutting of the second year's growth is the most practical one to leave, although maximum yields of seed can be obtained where the first cutting is allowed to grow to maturity. Sweet clover may be harvested readily with a binder, binding and shocking it like a small grain crop, or by cutting with a mower and raking and stocking similar to the way alfalfa is grown for seed and handled. In Western Kansas it is common practice to head the sweet clover with an ordinary grain header. It is then shocked in medium-size shocks, usually

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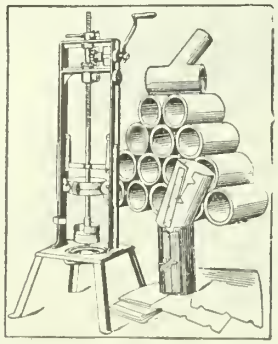

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placing one header-box load in each shock. This allows it to cure out readily and permits it to be stacked in a small space so it can be brought rapidly to the thresher. It should be cut about the time three-fourths of the seed pods become dark. Avoid handling the straw when in a very dry, brittle condition, as the seed will shatter badly at such times. The sweet clover should not be hulled or threshed until it is thoroughly dry."

BUILDING A SILO.

A. A. J., Nova Scotia: We have come to the conclusion that a silo is the best way of saving our corn crop. Our farm is 100 acres and produces hay, grain, good corn and roots. What will a 12x30-foot silo feed? What should be fed with it?

Answer: The average beef feeder will eat about 30 lb. of silage per day. One man says he throws down good straw with the silage the day before feeding and this becomes moist and supplies the needed roughage. With it he would have to feed meal, accordingly as he was desiring beef or milk results. A 12x30 silo will hold about 75 tons. This would feed about 30 cattle for eight months at this rate.

A very good rule to govern one is to feed three pounds of silage per hundred live weight, or thirty pounds for a 1,000-pound animal, and a liberal amount of oat and clover hay daily. A mixture consisting of 400 lbs. ground barley, 200 lbs. malt, 200 lbs. ground oats, or bran or alfalfa meal will make a very good combination to supplement this roughage. Feed about one pound of this mixture for each 3½ to 4 lbs. of milk produced in the case of dairy cattle.

SHARES IN A MILK COMPANY.

F. H. W., Ontario: I am thinking of investing in the —— Dairy Co. They offer more for the milk where the producers are shareholders. Is the company sound? What about the double liability of the shareholders in case of failure? Is there any danger of the president crowding out the smaller members? I would get back my investment anyway in three years through the extra price paid for milk.

Answer: I have answered your letter privately. The company you mention are apparently in good circumstances. From the fact that the shareholders meet under the regulations of the Joint Stock Companies' Act, and can inquire into the doings of the executive, and better because, the men in charge are known to be straight, the chances are that the investment would be all right. The best security in any undertaking lies in the wisdom of the manager. Be active in your own interests if you subscribe.

PASTURING FALL WHEAT.

A. A. J., Ontario: My fall wheat got a vigorous top on it this fall. Would you pasture it down?

Answer: The growing season has been favorable this year to fall wheat and many fields show considerable top. If the wheat strikes out on the stalk it is likely to perish badly in the winter. Where the top is excessive. I would turn on the sheep or calves, animals not heavy on the ground will not hurt much. Do not allow close cropping of course.

TWIN HEIFER CALVES.

W. A. New Brunswick: Will twin heifer calves be safe for breeding purposes?

Answer: Yes. It is the female of twins where one is male that fails to breed in the cases generally reported on.

SAN JOSE SCALE.

J. T. F., Ontario: When is a good time to spray for San Jose scale on my apple trees.

Answer: The fight against the San Jose scale can begin as soon as the leaves drop. The standard remedy is lime-sulphur. It may be bought in barrels ready for use. If you have means to boil it yourself, perhaps you can be better served. Use the following formula: Slake twenty-two pounds of fresh lump lime in the vessel in which the mixture is to be boiled, using only enough water to cover the lime. Add seventeen pounds of sulphur (flowers or powdered), having previously mixed it in a paste with water. Then boil the mixture for about an hour in ten gallons of water, using an iron (not a copper) vessel. Next add enough more water to make, in all, fifty gallons. Strain through wire sieve or netting, and apply while mixture is still warm. A good high-pressure pump is essential to satisfactory work.

HOG FEED.

F. M. D., British Columbia: What will take the place of skim milk in a hog ration? Is skim milk worth 50 cents a hundred for feeding hogs?

Answer: An article in this issue on hog feeding answers your question exactly. Milk is not worth half that price in feeding hogs.

BUYERS OF MILK AND CREAM.

J. J. H., Ontario: Would you please send me the address of firms in Toronto who buy milk and cream.

Answer: The leading dairies in Toronto are the Farmers' Dairy Co., the City Dairy Co. and S. Price & Sons. There are a large number of smaller firms purchasing dairy products.

KARAKULE SHEEP.

J. S., Ontario: I see you have been writing about those Karakule sheep in your November issue. I have always taken a great interest in those sheep and would like to have them to breed. Could you let me know of anyone who has them for sale.

Answer: These sheep have only recently been introduced into Canada as the article states. There are two or three firms in Canada. Perhaps they will be able to let us know particulars for our correspondent.

FREE TRADE COUNTRIES.

M. A. C., Ontario: What countries are free trade countries? How could I get prices of various articles which are imported in those countries?

The Department of Trade and Commerce for Canada reports that every country has a customs tariff on imports, even including the United Kingdom. I enclose you herewith a statement showing for principal countries the imports of merchandise and the duty collected for the year 1912, with the average *ad valorem* rate of duty thereon. From this statement, you will observe that the average *ad valorem* rate for Belgium, China, Denmark, Netherlands and Switzerland is lower than for the United Kingdom which is supposed to be a free trade country.*

	Total Imports £	Duty Collected £	Average Ad. Val Rate %
Russia	123,687,000	34,925,000	28.24
Finland	18,801,000	2,153,000	11.45
Norway	28,594,000	2,896,000	10.13
Sweden	43,494,000	3,575,000	8.22
Denmark	41,037,000	1,983,000	4.83
German Empire	525,601,000	38,112,000	7.25
Netherlands	297,328,000	1,315,000	.44
Belgium	198,320,000	2,978,000	1.50
France	329,232,000	27,254,000	8.28
Switzerland	81,577,000	3,424,000	4.19
Portugal	16,794,000	3,761,000	22.39
Spain	42,089,000	6,073,000	14.43
Italy	148,677,000	14,446,000	9.76
Austria-Hungary	148,200,000	10,514,000	7.09
United States	341,817,000	63,521,000	18.58
Mexico	18,647,000	4,309,000	23.10
Cuba	25,048,000	5,350,000	21.35
Argentine Republic	76,971,000	16,578,000	21.53
Chile	25,084,000	4,626,000	18.44
China	72,197,000	2,449,000	3.39
Japan	64,828,000	6,222,000	9.60
United Kingdom	632,903,000	36,139,000	5.71
British India	117,988,000	7,665,000	6.49
Australia	76,504,000	12,071,000	15.6
New Zealand	20,584,000	3,425,000	16.63
Union of S. Africa	38,838,000	4,509,000	11.61
Canada	141,135,000	23,342,000	16.53

*This is due to the fact that the duties on alcohol and tobacco run into hundreds per cent. Apart from these duties and that on tea, the U. K. is practically free trade.

RULES TO SUCCESS.

The following were the rules of life adopted by Robert C. Ogden, a successful business man in the United States. They might well be studied by every farmer.

Keep faith in humanity.

A man becomes what he most desires to be.

Do not mistake a prejudice for a principle.

Keep your intellectual and spiritual life bright.

Be energetic, wideawake, pushing, but be patient.

The world wants men who are well equipped and worthy.

False witness may be given by a gesture or a grimace.

Honor womanhood if you would keep faith in humanity.

What a marvel of a business men's guide is the book of Proverbs.

The longer you live, if you live right, the less you will think of yourself.

Be true. Stand up and believe in yourself, then other people will believe in you.

A vigorous, healthy man has really only one right in the world, only one thing to demand, and that is a chance to work.

In every life comes some crisis when conscious integrity gives a power and heroic strength that can come from no other source.

The charity that we are bidden to display is broad as God's sunshine, but his laws are fine as a razor's edge, and quite as keen.

By GRASMERE

The value of a favorite pursuit lies not only in its calculated results, but also in its by-products.
—Henry Van Dyke.

There is a time for looking backward. It may occasion a better going forward. And December is the one month of the year for this rearward vision.

How have my plans for 1914 carried out? Wherein did they fall down? Why was it? Was the planning wrong or ill-advised or was it the fault of circumstance? Undoubtedly there is a disposition this year to blame all things to the war. There were many plans doomed to failure regardless of the war. Let us be honest and being honest, pave the future better for 1915's through traffic.

Mayhap we have failed in our fruit pack. Some customers will not praise us in the gates. Or that pure-bred animal we shipped was nothing but a gilded scrub! Our eyes are often blind to defects in our own. It takes a very impartial person to be a successful judge of his own works.

Our field crops have disappointed us in some particular. Why was it? We had a good rotation and cultivated and manured well, and still there was a slim yield. It is possible that there is toxic substance at work in our clays that we must study. Do soils need careful study and occasional correctives and tonics? Was it the toxic value of the buckwheat on that field last year that killed so many of the milk thistle and ragweed?

Then again in our breeding operations, in spite of our knowledge of Mendel's law we wonder at the sport that appeared in our herds. At the conformation of that Clyde colt that is disappointing. A moment's reflection opens up a vast field of which we as farmers are yet totally ignorant. We tread as it were, on the very margin of unexplored valuables in farm practice. You will note that the farmer who finds nothing to do towards improvement soon tires of his own company.

Prices have not panned out as were expected. Wheat went up but the majority of things saleable fell lower in value. That carload of feeders on pasture did not net the prices expected. The war can safely be credited with an unusual disturbance in prices.

How about the new house and buildings? Was our best knowledge of step-saving, view-getting, water and light conveniences appealed to? Is the house-plan fifty years in advance of our grandfather's?

Above all the question of social betterment obtrudes above the dollars and cents. If man is no more than a sheep, he can neglect this retrospect.

On the 25th, crown the year with a family gathering. Make the home joyful, lovable, companionable. Eat the turkey of a pure domestic democracy.

Our calculated results have not all been obtained but the by-products are going to be exceedingly valuable.

PLAN A CHARITABLE CHRISTMAS.

THE farm is the ideal place on Christmas Day. In this year of war, plan to make a few others happier, than your mere family circle. Remember the poor, the unfortunate and the hungry. It is not the magnitude but the spirit of the gift that makes this old world move.

FARM CLEARANCE MONTH.

December marks the end of a year's business. Looking forward to another must now be the order of the day. Therefore this month proclaims a sort of truce in farm operations. Let us plan our campaign, organize our forces and equip our infantry. Good farming demands such a yearly introspection.

THOSE TENT CATERPILLARS.

Most fruit-growers know what a pest the tent caterpillar was last year. Many poor yields of fruit were due to its ravages. The egg nests can be easily seen now and these can be pulled off of young apple trees. Spraying with a strong solu-

PROTEIN (the nitrogenous matter) is the most valuable and necessary element in all animal foods. It builds up the flesh and keeps it in general healthy condition.
The food that contains more protein than any other is

"MAPLE LEAF"
OIL CAKE MEAL
(Fine ground or nutted)

This meal is made by the old process and is guaranteed pure and unadulterated. Read this analysis:—
Dr. J. T. Donald,
Analytical Chemist and Assayer,
318 Lagauchetiere St. West,
Montreal, March 10, 1914.

CERTIFICATE OF ANALYSIS
(Laboratory No. 61793)
of 1 sample of Oil Cake Meal marked "MAPLE LEAF"
Received from Messrs. Canada Linseed Oil Mills, Limited
This sample contains:
Proteins...(Flesh Formers)...38.28%
Oils.....(Fat Formers)..... 6.45%
Carbo-Hydrates (Fat Formers) 33.18%
77.91%

These figures show that this cake is a cattle food of very high grade. The large percentage of Proteids or Albuminoids, the flesh-forming matter, is a notable feature in Oil Cake.
(Signed) J. T. DONALD,
Official Analyst to the Dominion Government.

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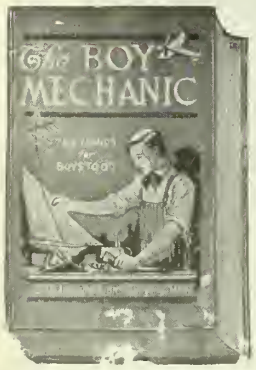
The Boy Mechanic



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tion of lime-sulphur will be a good thing during this month.

GET THE BLUFF WOOD.

December is the ideal month for cutting bluff wood. The snow is not deep now.

GET HAY STACKS HOME.

Before the snow banks around the distant hay stacks, draw them to the barns this month. It will save every way.

REMOVE DECAYED VEGETABLES.

Look over the stored vegetables for decayed ones. Beets, carrots and parsnips will keep better packed in a box with clean sand.

PROTECT FARM TREES.

Where fruit trees are near fences, or liable to be in deep snow, take precaution by wrapping with tar paper to protect against mice or rabbits.

STORE THE ONIONS.

Store the onions in a dry, airy place—not in the cellar. Spread them on the barn floor, and after they have frozen solid, cover them with hay or straw.

HALTER-BREAK THE FOALS.

It is always wise to halter-break the colts early in the winter, kindness and firmness will soon conquer. Be careful not to let them form bad habits at this age.

DISINFECT STABLES.

For those who have not yet the disease in their herds, cleanliness, disinfection, and watchfulness should be the watchword.

For disinfection, use formalin, lysol, zenoleum, or other of the disinfecting agents, also add these to hot whitewash and give the entire stable and equipment a good coating after cleansing thoroughly and removing all rubbish and rotten wood.

AMONG THE SHEEP.

Start the farm flock off on a good winter's run by having a clean, well-ventilated, free-from-draft shed for them to enter of nights, and in case of rain or snow. Do not allow sheep out in storms. Examine their feet. Keep a box of salt and charcoal, with some sulphur in it, within reach all the time.

Feed alfalfa hay, oat straw, bean straw, pea straw in racks where it will not dirty the wool. Cracked corn, peas or oats will furnish the necessary grain. Turnips should be fed sparingly to breeding ewes. Keep fresh water within reach.

FATTENING LAMBS.

Feeding lambs for market will take a ration something like either of the following. Amount per lamb per day given in two feeds: Alfalfa hay, 1 lb.; other hay, ¼ lb.; roots, 2½ lb.; cracked corn or peas, ¼ lb.—or clover hay, 1½ lb.; roots, 2½ lb.; cracked corn or peas, ⅛ lb.; oil-meal, 2 lb.

A test made by the New Hampshire Experiment Station recently showed that many lambs lost weight under what some farmers called a good feed. For instance, one feeding lambs all the hay they would

eat, 1 lb. of roots and ⅛ lb. of oats and bran mixed equally per day went behind. It pays to know.

FOR THE SEED FAIR.

Plan your seed grain futures this month. You will thus be ready for the seed grain fairs.

VALUE OF ALFALFA.

Good, well-colored alfalfa is of practically the same composition as wheat bran and is of equal value to it in the horse ration.

PLAN FOR MAPLE SUGAR.

The new Act regarding the use of the word *Maple* comes into effect January 1st, 1915. Maple tree products will be better protected and it will pay to tap your trees.

MEASURE YOUR FEEDS.

Any farmer who takes the time to measure out his feed to his livestock for a month according to a good feeding standard, will be surprised to learn of what he is wasting.

HAY FOR HORSES.

Do not feed so much hay as some men give. One pound of alfalfa or other hay with about 1¼ lb. of grain per day for each 100 lb. of the horse's weight is a good ration for a *working* horse. That is a 1,600-lb. horse will take 16 lb. of alfalfa and 20 lb. of grain. Idle horses require entirely different feeding.

FEEDING ALFALFA.

Alfalfa can now be fed to all kinds of farm stock. Feed it to the hogs on a cement floor, and watch how your meal bills are reduced. Feed it to poultry also.

Feed alfalfa to horses, but do not give them all they want. Horses will eat too much where allowed full access.

BEWARE OF POULTRY DISEASES.

Possibly more failures in the poultry business are due to disease than to any other cause. The great cause of disease is neglect in keeping houses, coops, yards, etc., clean. In the winter if houses are not cleaned regularly and well, the birds, especially if closely housed, are very likely to contract a serious disease which may be contagious and spread through the whole flock. Keep fresh air, clean water, clean houses and no drafts. Give fowls plenty of exercise by feeding grain in straw.

FOR WINTER EGGS.

Four classes of food are absolutely essential for the greatest winter egg production. These are:

Grain food, e.g., wheat, oats, corn, barley.

Green food, e.g., mangels, turnips, cabbage, sprouted-oats.

Meat food, e.g., buttermilk, skim milk, dried beef scrap.

Grit and shell, e.g., egg shell, oyster-shell, broken stone, etc.

A mixture of grains usually gives better results than a single grain. Wheat is about the best single grain. Oats, if of good quality, are excellent, the large

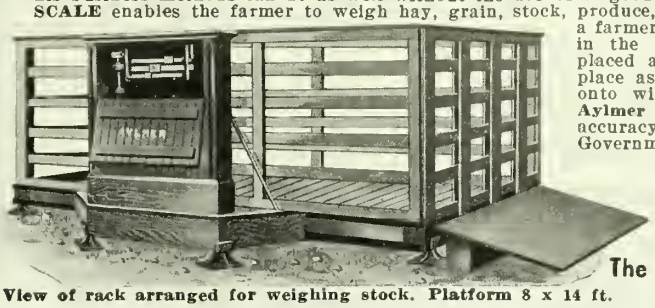
The Farmer who owns a good scale

has many decided advantages for doing business

His knowledge of the exact weight enables him to make quick sales that would otherwise be lost. By keeping tab on the weight of his cattle, he saves on feed—knows exactly what animal is gaining or losing weight.

He Gets Better Prices for His Cattle and Hogs

His exact knowledge saves him from the mercy of the buyer. No farmer who prides himself on his business methods can do as well without the use of a good scale. **THE AYLMER PITLESS SCALE** enables the farmer to weigh hay, grain, stock, produce, and a dozen and one things that a farmer is buying and selling every month in the year. The **Aylmer Scale** can be placed anywhere, or moved from place to place as required. Always ready to drive onto without injury to mechanism. The **Aylmer Scale** gives absolute assurance of accuracy. Approved and passed by a Government inspector.



View of rack arranged for weighing stock. Platform 8 x 14 ft.

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keeps horses, cows, sheep and pigs in such prime condition, because it is composed of the same herbs, roots, seeds and barks that these animals eat freely when running wild. We grind these ten medicinal substances to a fine powder, mix them thoroughly and give them to you, at their best, in International Stock Food.

This is why a tablespoonful of International Stock Food with the regular grain feed tones up the system of horses, gives them new life, and a glossy coat of hair. It is the best thing you can give a horse for indigestion, liver trouble, coughs, influenza, hide bound or blood trouble. International Stock Food is equally good for horses, cattle, sheep and hogs. It keeps the system in a healthy condition and promotes rapid growth. For sale by dealers everywhere. 111

INTERNATIONAL STOCK FOOD CO. LIMITED. TORONTO, Ont., Can.

The

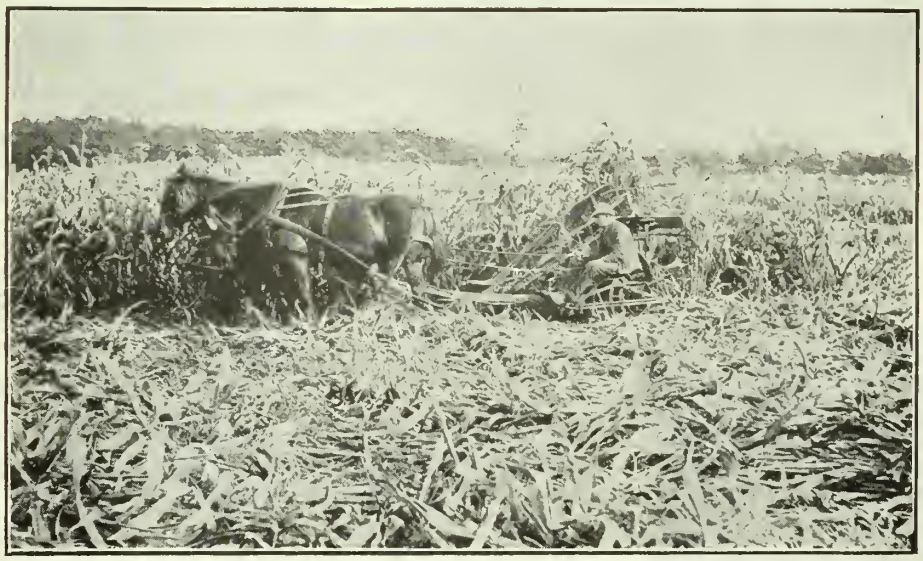
Business *of* Farming

By WILLIAM C. SMITH

AUTHOR OF

"How to Grow 100 Bushels of Corn per Acre on Worn Soil"

PRICE $2.15, POSTAGE PAID



FARMING is our biggest business. It feeds the nations of the world and is the basis of all prosperity and happiness, and therefore should receive our biggest consideration and be safeguarded by our best brains and legislation.

IN these days of worn and worn-out soils and the abandoned farm, with the most improved labor-saving farm machinery, the business of farming needs brains more than brawn, that our soils may be rescued from the wilderness of wasted fertility that has stifled them.

The Author, Mr. Wm. C. Smith, is a practical farmer. He has demonstrated in a practical way the possibility of rejuvenating worn soil and increasing the efficiency of the farm. His volume, "THE BUSINESS OF FARMING," in its simple and direct manner, gives one facts of farm operation in every department that are available. The first part of Mr. Smith's new volume contains a history of the science of farming from the dawn of creation to the present time. Among the chapters following this are: "By-Products of the Farm," "Utility and Conservation," "Farm Bookkeeping," "Real Cost of Operation," "Care of Machinery," "Home Building on the Farm," "Importance of Live Stock," "Net Results in Feeding of Cattle, Hogs and Sheep," and many other valuable Chapters.

"THE BUSINESS OF FARMING," by Wm. C. Smith, author of "How to Grow 100 Bushels of Corn Per Acre on Worn Soil," is a practical book by a practical man, covering every subject of necessary knowledge for those interested to the slightest degree in Agriculture. This book is encyclopedic in its completeness and utility.

Dignified binding. Handsomely illustrated with 38 full-page illustrations, $2.15.

The MacLean Publishing Company, *Limited*

Technical Book Department: 143-153 University Avenue, Toronto.

amount of hull being the greatest objection. A mixture of two parts corn and one part wheat is good for winter use. Barley is generally a little unpalatable and contains a large amount of hull.

STUDY MARKET CONDITIONS.

Make a practice of studying market conditions. Do not try to market all your fowl at one time. Local conditions must be a guide to a certain extent.

ORDER NURSERY STOCK.

Order your spring nursery stock early. Study what you want and insist on getting it. Do not take the agent's advice as to varieties, unless he is a little better informed than most tree agents.

DID YOU WRITE DUFF?

Ontario farmers who know the value of Prof. Zavitz to the College, were glad to learn of Hon. James Duff's method of settling the trouble. Did you write Mr. Duff approving of his action?

ATTEND THE STOCK SHOWS.

Every livestock farmer should attend at least one day at a fat stock show. The points gained as well as the enthusiasm of seeing others, will add dollars to your efforts.

HELP RELIEF WORK.

Besides building up a reserve of moral strength and backbone, the giving of provisions for the Belgian and other relief works, adds to the sum of human kindness and British superiority. Above all be generous.

GROWING WOOL.

Many farmers have pumpkins which are a great relish for sheep. Refuse cabbage and roots of different kinds are also good. For a heavy growth of good oily wool, we must always supply a little succulent feed along with their hay and straw. A limited amount of well matured silage, a few pumpkins, cabbage, turnips, rutabagas or potatoes help wonderfully.

EARLY WINTER SHOWS WEAKNESS.

The weakness of putting off the repair work was evident on many farms this year when November brought such cold weather. Do not trust to Providence to keep your stock healthy if you have left drafts in the walls and windows and have not provided good air and disinfected stables.

FATTENING GEESE.

From two to three weeks feeding will prepare the geese for the market. Feed three times daily. Corn, wheat and cooked potatoes will be good for them. Potatoes are cheap this year. Ducks may be fed on the same. It is best to keep the fattening fowls in a small enclosure.

FEEDING STOCK DUCKS.

During winter, food should be allowed early in the morning as hot as the ducks can eat it. When meat is given fine shorts and a small quantity of barley-meal are the best meals to use; where meat is lacking, a mixture of ground bones, oatmeal, and buckwheat-meal, well soaked and dried with fine shorts will be found very

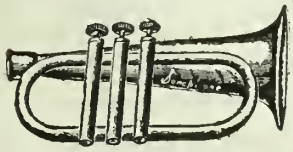
Play the Piano in two-thirds less time.

I guarantee to teach you how. Have trained thousands in Great Britain and **never once failed.** To introduce my System in Canada will send well-known, expensive work, **"Mind, Muscle and Keyboard," POST FREE,** to every pianist sending name and address. Useful work on any bookshelf. **Mr. H. BECKER, The** European Authority on the Piano, 32C Bristol House, Holborn Viaduct, London, England.

SOLDIER BOYS AND GIRLS

Everywhere boys and girls are playing soldier, either with playmates or toy soldiers.

GET THEM FOR CHRISTMAS A SONOPHONE



They can sound the bugle call or play march music without instructions. You can play it if you can hum. A most wonderful musical instrument, which will give great pleasure to the grown-ups as well as to the children. Make some boy or girl happy. Send to us and we promise immediate delivery.

$1.00 for 3-Valve Cornet 9 in. long, 4½ in. Bell | **THE SONOPHONE CO. 338 Broadway, New York**

The Christmas Gift Problem

One way of solving the Christmas gift problem — and it has become a very popular way—is to give a one year's subscription to The Farmer's Magazine to your friend.

The recipient of such a useful gift receives each month a pleasant reminder of the thoughtfulness and kindness of the donor.

An appropriate Christmas card, expressing the wishes of the donor, will be mailed along with the first issue of the magazine, so as to be received before Christmas morning.

THE FARMER'S MAGAZINE,
143-153 University Ave., Toronto.

Send The Farmer's Magazine for one year to ....
Name

....
Address

Name of Donor ....

Address ....

Enclosed is $2 to pay for same.

beneficial. The soft food should always be well prepared, every part being mixed, and it should not be sloppy.

WRAP THE WATER PIPES.

Take a little thought to water pipes and pumps before a cold snap bursts them.

THE NEW HOUSE.

If you are going to build a new house next year, begin drawing materials now. Gather your plans and do not despise any.

FATTENING HOGS.

Have the sleeping quarters warm and dry. Have plenty of ventilation in the pens. Study the bunch to see that no one is losing. The profit lies in the little things. Feed alfalfa and red clover if you have it. Keep a corner where charcoal, sulphur, and salt mixture can be reached by them.

ADVERTISE YOUR GOODS.

If you have anything to sell advertise it in the best places to get results. A Cotswold sheep breeder recently put one advertisement in FARMER'S and sold nearly $300 worth on the strength of it. He asked reasonable prices and was honest in his goods.

CARE OF LIGHTING SYSTEMS.

If you have electric or acetylene lighting plants, examine carefully for any re-

MR. T. A. BENSON,
Dominion Poultry Expert, who is doing good work in P.E.I.

Omazon

Canadian Stock Food for horses and all animals

Omazon prevents or cures all diseases by purifying the blood. Gives appetite as wel las vigour and endurance; assists digestion and increases the quality and quantity of milk in the mare and cow, and in addition makes for the development of the animal.

Mixed with food it curtails the quantity of grain required.

VIVAT

The Horse's Friend

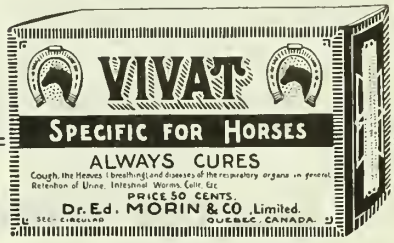
The Respiratory Organs' Remedy

Cures Coughs, Heaves, Broken Winds, etc. Beneficial in cases of Colics, Intestinal Worms and Kidney Troubles. Special directions in each case.

Circular C will be mailed on request.

Ask your merchant for our Preparations.

Proprietors, DR. ED. MORIN & CO., Limited
Mountain Hill, Quebec, Canada



Get **The Latest Modern Silage Methods**

Tells you all there is to know about present-day silage feeding—how to build silos. Gives reliable and unbiased facts (we do not sell silos) on every silo built—home made—stave, hoop and octagonal silos—pit, brick, tile, cement, concrete silos—all modifications. Also covers every crop used for silage—41 of them. Here's an entirely new book—264 pages—better than former copies used as text books in colleges. Copyrighted November, 1914. Ten page index. We send it for 10c coin or stamps. Send for this new copy today.

Silver's "Ohio" Silo Fillers

Write for catalog and booklet "Silo Filler Logic" which we send free. Enclose 10c and we send "Modern Silage Methods" with them.

The Silver Mfg. Co.
331 Broadway, Salem, O.

There's SALT and Salt

RICE'S SALT

Has the vim, the strength. It is pure. An even-grained salt that gives entire satisfaction for table and dairy use. It goes further.

Ask your dealer for more than salt—say "Rice's" and get satisfaction with your salt. Quotations and further particulars on request.

The North American Chemical Co., Ltd.
Clinton, Ont.

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FIVE CENTS PER WORD.

AGENTS WANTED.

AGENTS DOUBLE THEIR MONEY SELLING "Dorsey" Milk Bottle Covers." New, sanitary, useful. Easy seller. Sample prepaid ten cents. Hollinrake Specialty Company, Wholesale Distributors, Hollinrake Building, Toronto. (12)

AGENTS WANTED FOR HIGH-CLASS specialty. No competition. Lightning seller. Manufacturers' Agents, 185 Jarvis Street, Toronto. (12)

EDUCATIONAL.

THE DE BRISAY METHOD IS THE ROYAL road to Latin, French, German, Spanish, Thorough mail courses. Students everywhere. Highest references. Academie De Brisay, Ottawa. (3-15)

HOME STUDY.

VENTRILOQUISM—ALMOST ANYONE CAN learn it at home. Small cost. Send to-day, 2 cent stamp for particulars and proof. O. A. Smith, Room D71, 823 Bigelow St., Peoria, Ill., U.S.A. (tfe)

FERRETS FOR SALE.

FERRETS, DRIVE RATS, RABBITS AND etc. Mammoth Pekin clucks. Stamp for prices. Calvin Jewell, Spencer, Ohio. 3-15

FARMS WANTED.

WANTED TO HEAR OF GOOD FARM OR unimproved land for sale. Send description and price. Northwestern Business Agency, Minneapolis, Minn. (12-2)

FARMS FOR SALE.

920 ACRE STOCK RANCH. 400 ACRES UNder cultivation, excellent grazing, immediate vicinity recognized best proposition in district, good dwelling houses, telephone, water, granary, sheds, stables, etc. $24 per acre. H. Whiting, Kettle Valley, B.C. (12)

BUSINESS CHANCE.

FREE FOR SIX MONTHS — MY SPECIAL offer to introduce my magazine "Investing for Profit." It is worth $10 a copy to anyone who has been getting poorer while the rich, richer. It demonstrates the real earning power of money, and shows how anyone, no matter how poor, can acquire riches. Investing for Profit is the only progressive financial journal published. It shows how $100 grows to $2,200. Write now and I'll send it six months free. H. L. Barber, 468, 20 W. Jackson Blvd., Chicago.

Can the Principles of Efficiency Be Applied to Nation Building?

The Financial Post in a recent issue said that when history comes to be written it will be found that the Kaiser was the greatest business man in the history of the world; that he was great because he has been able to gather about him the ablest business and professional men in the German Empire.

For more than a year *MacLean's Magazine* has been running a series of articles on the great men who have aided the Kaiser. They are now published in book form. The author is Frederic W. Wile, the correspondent of the London Daily Mail, who has lived in Berlin for fourteen years and was in the closest touch with the leading men of the German Empire. Mr. Wile was thrown into prison immediately after the war started; but was rescued by the American Ambassador and accompanied the British Ambassador in his escape from Germany.

For a thorough understanding of the vast and efficient organization behind the German Empire, Mr. Wile's new book, "Men Around the Kaiser," will prove of timely value.

In it Mr. Wile sketches the characters of those now in the thick of Germany's fight for existence. There are chapters on Von Tirpitz, who is directing the naval warfare on England; on Von Bethmann-Hollweg, the Imperial Chancellor; on Ballin, of the Hamburg-American Line, which stands to lose in the war probably more than any other single German undertaking; on Von Gwinner, banker and railroad builder; on Von Jagow, the Foreign Secretary; on Prince Lichnowsky, the German Ambassador to England; on Field-Marshal Von der Goltz, organizer and strategist; on Dernburg, a business man in politics; on Count Zeppelin, who has equipped the aerial leviathans, which fly the battle flag of the German army and navy, with searchlights, wireless telegraphy, bomb-tubes and machine guns to carry the warfare into England; and other of the inner circles of the Kaiser's counsellors at this crisis of his reign.

The MacLean Publishing Co., Ltd., 143-153 University Avenue, Toronto, secured a limited De Luxe Edition, bound in "silk lustre" cloth, of "Men Around the Kaiser." As long as the supply lasts, copies will be mailed to any address, on receipt of $1.00, postage paid.

pairs needed. Take no chances on wrong wiring. Save the acetylene sludge for whitewashing the cellars or for putting on the soil.

SUGAR BEETS.

Next year will likely see a larger acreage of sugar beets sown in Canada. Watch the January issue for a special article on this by W. A. Craick.

COVER THE STRAWBERRIES.

Now that the ground is frozen give the strawberry patch a light covering of straw or hay that is free from seeds. Read the strawberry article in this issue.

GET YOUR FARMER'S BOUND.

It is a good idea to get your year's copies of FARMER'S MAGAZINE bound for future reference. The articles will be invaluable to you in many of your operations.

CARE OF THE SEPARATOR.

Many careless farmers, have the cream separator in their stables, unprotected from dust, dirt and odors. If possible have it in a separate room with a cement floor and a drain.

WITH THE BEES.

Some persons protect their bees by building sheds on all sides but the south. This allows the bees to come out on warm days, and many fly away to perish. Keep the bees in a dark room after the frosts set in, and bring them out in the spring. The feeding process will have been done before this.

Fattening a Carload of Cattle

Feeds to be Provided for the Small Farmer's Steers

Figures Given by D. O. Thompson in *The Country Gentleman.*

CATTLE feeding is not for the big farmer only. A man with any practical knowledge of cattle feeding may advantageously, often very profitably, feed a carload, or about twenty steers, even though he has not more than eighty or one hundred and twenty acres of fairly productive corn land.

The advantages of winter cattle feeding to the man on the average-sized farm in Indiana may be summarized briefly as follows: The corn produced may be marketed on the hoof at an advance over the market price. Many roughages not otherwise convertible into money may be cashed through cattle. Great quantities of valuable manure are produced, which materially increase the succeeding crop yields. The farmer, or his hired labor, is given profitable employment throughout the winter months.

What provision for feed should be made by the small farmer who contemplates feeding twenty head of steers? Considering that these steers are two-year-olds,

and that the feeding period will be about 160 days, the following feeds may well be provided, the amount of each kind needed being given in each of the combinations:

If clover hay is to form the sole roughage from 1,180 to 1,200 bushels of corn, from 17.5 to 18 tons of clover hay, and 4.5 tons of cottonseed meal will be required to fatten the twenty steers if they are average good animals. In 1911-12 this ration was fed at Purdue Experiment Station. Cottonseed meal was charged at $29 a ton and clover hay at $20 a ton, and the corn fed brought $.744 a bushel. It might be stated that this particular year was especially favorable for success with cattle feeding, principally because of the market conditions.

SILAGE CUTS THE GRAIN BILL.

If corn silage is substituted for a part of the roughage in the ration the farmer need not provide so much corn. To finish the steers from 780 to 800 bushels of corn, from 39 to 40 tons of corn silage, 4.5 tons of cottonseed meal, and from 4 to 4.5 tons of clover hay should be required. When this ration was fed at Purdue during the same winter as the other, cottonseed meal was charged at $29 a ton, clover hay at $20 a ton, and corn silage at $4 a ton, and the corn fed brought the very high price of $1.076 a bushel.

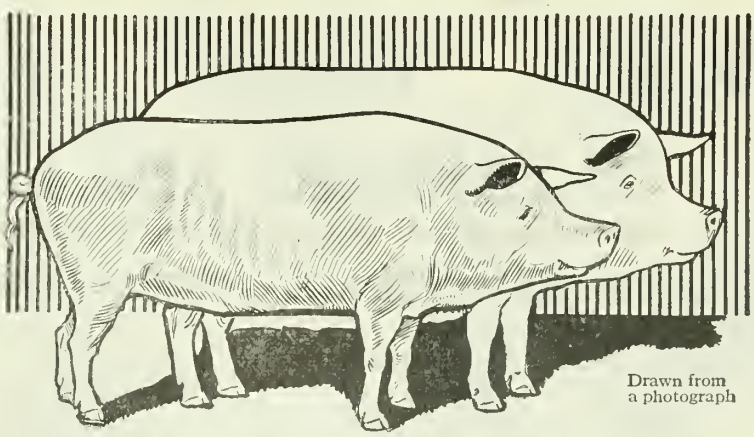
If no other roughage is available, and corn silage is used as the sole roughage, the following provisions for feed should be made: From 835 to 900 bushels of corn; from 44 to 45 tons of corn silage, and 4.5 tons of cottonseed meal, these amounts being based upon results experimentally obtained. Charging for cottonseed meal at the rate of $20 a ton, and corn silage at the rate of $4 a ton, the corn fed the steers in the trial at the Indiana Experiment Station in 1911-12 brought $1.20 a bushel when fed in this ration.

The last would seem to be the best ration. But steers seem to be hardly satisfied unless they may have a little dry roughage in the ration. If clover hay or alfalfa is high in price or not readily available, good, bright oat straw may be fed in small amounts to good advantage.

STRAW FOR ROUGHAGE.

When corn silage and oat straw are to constitute the roughage for fattening twenty steers the following amounts should be provided: From 790 to 850 bushels of corn; from 40 to 42 tons of corn silage; from 3.5 to 4 tons of oat straw, and 4.5 tons of cottonseed meal. When this ration was fed at Purdue in 1911-12, on which results the above figures are based, corn silage was charged at $4 a ton, cottonseed meal at $29 a ton, and oat straw at $8 a ton. The corn that was fed in this trial brought $1.048 a bushel.

If the small farmer has or can borrow from $1,500 to $2,000 for the purchase of cattle and cottonseed meal, which is the only feed he need buy, he may give his attention to the problem of fattening cattle as a farm practice whereby the best of prices may be obtained for the crops he produces and the productivity of his acres may be increased through wise application of the great quantities of valuable manure produced.


Drawn from a photograph

Both the Same Age

The larger one had Harab Digestive Tankage included in the feed. The smaller was fed the usual grain diet. The larger one sold for $3.80 more, and the extra cost of feeding was but $1.10, leaving a net profit on the larger hog of $2.70. Which would you rather raise?

Harab Digestive Tankage

provides the hog with eight times as much protein and bone phosphate of lime (two important food elements) as an equal weight of corn. It produces bone, muscle and flesh rapidly. One hog raiser writes us that since using Harab Digestive Tankage his hogs, when ready for market, weigh 30 to 40 lbs. heavier than hogs of the same age that have been fed in the ordinary way. You can do the same with your hogs.

Harab Digestive Tankage is a meat food. Clean, sanitary, wholesome. Can be fed wet or dry; alone or with other feeds. Excellent to use in combination with Cheese Factory Whey or Creamery Buttermilk. Large hog raisers and experimental farms are using large quantities. Write for Harab Tankage Booklet. It gives full particulars.

The Ontario Fertilizers, Limited
WEST TORONTO, CANADA 150

The Importance of Farm Drainage

There are many advantages in having your farm well drained that you are familiar with, but do you know the special advantages of your land tile? We carry the best land tile in the following sizes: 3, 4, 5, 6, 7, 8, 10 and 12 inch. Our own make.

We have an interesting booklet on farm drainage. Send a postcard and get one.

The Dominion Sewer Pipe Co., Limited
SWANSEA ONTARIO

FREE!!! FREE!!! FREE!!! FREE!!!

TO FARMERS AND FARMERS' SONS

SHORT WINTER COURSES at the ONTARIO AGRICULTURAL COLLEGE, GUELPH

The only expense to you is board at reasonable rates while in Guelph and reduced railway fare.

STOCK AND SEED JUDGING—January 12th to January 23rd, 1915. Judging Horses, Sheep, Cattle and Swine; Slaughter tests; lectures on breeding, feeding, etc. Judging grains and seed of other farm crops; selection, germination, purity, etc.

FRUIT GROWING—January 26th to February 6th, 1915. Varieties, nursery stock, spraying, fertilizers, pruning, marketing, etc. Classes in apple packing.

POULTRY RAISING—January 12th to February 6th. Poultry houses, breeding and mating, judging, feeding, winter eggs, fattening, dressing, marketing, etc.

DAIRYING—3 months' course in factory and farm dairying—January 4th to March 19th, 1915. Summer course in butter and cheese-making. Course in cow-testing and ice-cream making.

BEE-KEEPING—January 12th to January 23rd, 1915. Care and management, swarming, queen rearing, diseases and treatment, quality of honey, marketing, etc.

For full particulars write for our Short Course calendar, which will be mailed on request.

G. C. CREELMAN, President

A PROPOSITION THAT IS : : WORTH WHILE : :

One that will fill your spare time with congenial work—bringing good money. Are you interested? You are. Well, here are the details.

Throughout Canada is scattered an army of men who are everywhere booking subscriptions for Farmer's Magazine. If you join them you can add very considerably to your regular income. If you are a hustler you will find it will pay you to give all your time to the work.

Some of our most successful salesmen were "spare time" men first.

Write us for terms and full particulars

MACLEAN PUBLISHING COMPANY

143-149 UNIVERSITY AVENUE, TORONTO, CAN.

Forewarned is Forearmed

The grim spectre of war is daily taking its fearful toll of the nation's primest manhood, but this is only a small part of the millions of victims who succumb every year to chronic ailments, just because they neglected to treat them at the start.

Especially on the farm, where medical advice is often difficult to procure and where exposure to all kinds of weather is the lot of the country dweller, there is no standby so welcome and so relieving as Dr. Thomas' Eclectric Oil.

Most cases of torturing muscular rheumatism can be traced to the neglect in treating the effects of exposure or overstrain.

Dr. Thomas' Eclectric Oil, well rubbed in, goes immediately to the seat of the pain, and not only gives instant relief, but builds up the tissues and invigorates the whole system.

If a child be seized with colic, Dr. Thomas' Eclectric Oil, when sweetened with sugar, will overcome the pain and give the little sufferer ease. If a child shows symptoms of croup or other throat trouble, and the attack be met with Eclectric Oil, the suffering will be greatly mitigated, and by continued treatment with the Oil the ailment will be speedily subdued.

The muscles become pliant, without loss of strength by its use—it is the simplest and least expensive of really effective remedies.

Have a bottle of Dr. Thomas' Eclectric Oil always handy on the shelf. It is the veritable "stitch in time" that will safeguard you from untold future suffering.

It is known everywhere, used everywhere, and sold everywhere.

Your druggist or dealer can supply you.

Price 25 cents

Prepared only by

Northrop & Lyman Co., Ltd.
Toronto

Get the Eggs NOW While Prices are High

GILBERT HESS, Doctor of Veterinary Science, Doctor of Medicine

This is the time of the year when the price of eggs is high and your hens ought to be making up for the small egg crop during moulting.

But hens need a tonic during the winter months, because the lack of exercise and green stuff, and also close confinement, impairs the digestion, makes the system sluggish and the egg organs dormant. With the knowledge I have gained in a lifetime experience as a veterinarian, doctor of medicine and successful poultry raiser, I have succeeded in compounding a scientific preparation that will make poultry healthy, make hens lay and keep the egg organs vigorous and active.

Dr. Hess Poultry PAN-A-CE-A

contains ingredients for toning up the digestive system and enriching the blood. It also contains tonics for toning up the dormant egg organs and making hens lay, internal antiseptics for preventing and remedying gapes and other ailments, also bone and shell forming ingredients. Every single ingredient in my Pan-a-ce-a (printed on every package) bears the recommendation of the U. S. Dispensatory and other high authorities. Now read this carefully:

So sure am I that Dr. Hess Poultry Pan-a-ce-a will make your poultry healthy and make your hens lay that I have authorized my dealer in your town to supply you with enough for your flock, and if it does not do as I claim, return the empty packages and get your money back. Buy now on that guarantee.

Sold only by reputable dealers whom you know, never by peddlers. 1½ lbs. 35c; 5 lbs. 85c; 25-lb. pail $3.50 (duty paid). Pan-a-ce-a costs only 1c per day for 30 fowl.

My new poultry book tells all about Pan-a-ce-a. It's free.

DR. HESS & CLARK, Ashland, Ohio

Dr. Hess Stock Tonic

Your cows, horses and hogs are pretty apt to get out of fix during winter, because grain, hay and fodder do not contain the natural laxatives and tonics so abundantly supplied in grass. Lack of exercise is another thing that retards good health.

Dr. Hess Stock Tonic contains tonics that improve the appetite and tone up the digestion, laxatives for regulating the bowels, and vermifuges that will positively expel worms. I guarantee it. 25-lb. pail $2.25; 100-lb. sack $7.00; smaller packages in proportion (duty paid).

Dr. Hess Instant Louse Killer

Kills lice on poultry and all farm stock. Dust the hens and chicks with it, sprinkle it on the roosts, in the cracks, or if kept in the dust bath, the hens will distribute it. Also destroys bugs on cucumber, squash and melon vines, cabbage worms, etc., slugs on rose bushes, etc. Comes in handy sifting-top cans, 1-lb. 35c; 3 lbs. 85c (duty paid). I guarantee it.

Are You One of the Capable Men of Your Locality?

DO NOT DELAY *WRITE TO-DAY*

FARMERS'S MAGAZINE
143-153 UNIVERSITY AVENUE - TORONTO

DOES your present income permit you to enjoy all the every-day luxuries, an occasional vacation trip, a new watch, bicycle, or possibly an extra fall suit?

We are anxious to appoint a capable man in your district to represent Farmer's Magazine.

The work is enjoyable, keeping you out of doors and in touch with the activities of the community. You will not be a canvasser, for as a representative of Farmer's Magazine you will be received as one of the successful, capable men of the community. Consequently your success is assured from the very start.

ONE TENTH FOUND
TOBACCO
FOREST AND STREAM
TOBACCO
10¢
Per Tin
FOREST & STREAM
SMOKING
TOBACCO
Sir Walter Raleigh's discovery has reached perfection in "FOREST & STREAM"
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